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EDITORIAL

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THE

RAND-McNALLY GUIDE

TO THE

GREAT NORTHWEST

CONTAINING

INFORMATION REGARDING THE STATES OF MONTANA, IDAHO, WASHINGTON, OREGON, MINNESOTA, NORTH DAKOTA, ALASKA, ALSO WESTERN CANADA AND BRITISH COLUMBIA, WITH A DESCRIPTION OF THE ROUTE ALONG THE CHICAGO & NORTH-WESTERN, UNION PACIFIC, OREGON SHORT LINE, AND OREGON RIVER & NAVIGATION CO. RAILWAYS. GIVES THE EARLY HISTORY, TOPOGRAPHY, CLIMATE, RESOURCES, AND VALUABLE STATISTICS ON THE STATES COMPRISING THE GREAT NORTHWEST

By S. H. SOULÉ

With Maps and Illustrations

Chicago and New York:
RAND, McNALLY & COMPANY,
Publishers

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PREFACE

It is the purpose of this Guide to make that extensive territory, termed "The Great Northwest," familiar to those who as yet have but a vague idea of its vastness, its attractions, and it resources, and to give the homeseeker and the investor reliable information, obtained after a thorough investigation of every part of this great country.

President Jefferson builded better than he knew when, in 1803, he inaugurated the Lewis and Clark Expedition—an enterprise that has resulted in immense benefits to the nation, commercially and socially, creating new spheres for the investor and congenial surroundings for the homeseeker. The only wonder is that greater numbers of those who are to-day eking out a bare existence in cities, where the human congestion is a menace to health and a bar to wealth, do not realize the existing conditions—that in the Great West life may be made worth the living, a competency may be earned in a few years, and, independent, breathing the pure air of heaven, surrounded by Nature's marvels, happiness and comfort may be enjoyed to the fullest extent.

It is only within a very few years that people of the eastern states have realized what a wealth of scenery, or great natural resources, of hidden treasures, is contained in that section of the country, and what rich returns for industry, energy and brains are revealed in the magnificent progress of the states of Montana, Idaho, Oregon and Washington.

The great iron highways spanning the continent have made possible, as nothing else could, a close connection between the Atlantic and the Pacific coasts, and what has hitherto been regarded as a far away and unknown land is now within easy reach. When one has journeyed across the Rocky Moun-

tains, with their awe-inspiring gorges, their marvelous rock formations, and their rich colorings; when he has seen the mighty Columbia River with its long stretches of placid waters suddenly leaping into foaming cascades and swift torrents, its fleets of fishing boats and its great salmon canneries; when the blue depths of Puget Sound, that immense sea 1,200 miles long, with its countless harbors and bays, dawns upon the vision; and when the splendid cities of Portland, Tacoma, Seattle and Spokane meet his astonished gaze, the traveler realizes for the first time that the younger states of the Union are rapidly gaining for themselves a position in the commercial world which those of older growth have hitherto held unchallenged.

A great factor in the development of these Western states is the industry and progressiveness with which the people are imbued, and the fact that they have appreciated the wonderful opportunities presented for financial gain as well as the great advantages of climate and, consequently, physical benefits. There is no premium offered for indolence, but steady application and perseverence will bring the reward sought for, and success will crown the efforts of all who determine to secure it.

THE PUBLISHERS.

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EN ROUTE TO THE PACIFIC COAST

CHICAGO TO OGDEN.

In this edition of the Guide to the Great Northwest will be treated the route to the Pacific Coast by the Oregon Short Line and the Oregon Railroad & Navigation Co., from Granger to Portland, in conjunction with the Union Pacific and the Chicago & North-Western railways. It is not, therefore, requisite that an extended description of the route from Chicago to Granger should be given, but for the information of passengers making Chicago their point of departure the itinerary between these two points will be briefly treated.

The Chicago & North-Western connects with the Union Pacific at Omaha. Leaving the North-Western depot at Kinzie and Wells streets, Chicago, the journey through Illinois is without particular interest, the principal cities along the line being Geneva, which possesses many magnificent homes, and several large manufacturing interests; De Kalb, another extensive manufacturing town; Rochelle, Dixon, one of the oldest towns in Illinois; Sterling, Morrison, and Fulton, the latter being the last town in the state.

Iowa, "The Beautiful Land," as the Indians knew it, is today the garden spot of the middle west. In a short space of half a century a vast country until then unknown, except to migratory tribes of Indians, has become the center of the corn belt, studded with important and progressive cities, and the home of prosperity.

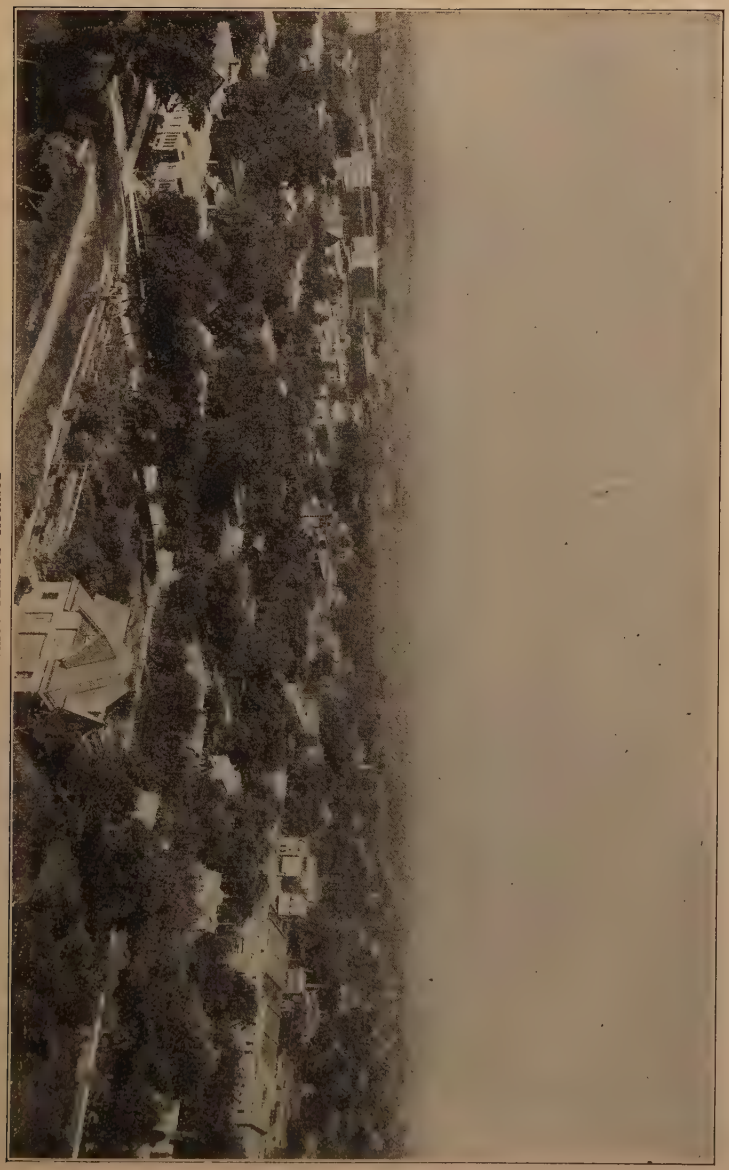
Through Iowa the train speeds, passing Clinton, a city of great wealth and fine homes; DeWitt, Mount Vernon, Cedar

Rapids, a railroad center of considerable importance, besides possessing extensive business interests; Belle Plaine, Tama, Marshalltown, Ames, Des Moines, the principal city and capital of the state, and possessing a very large distributing trade; Jefferson, Carroll and Denison, Missouri Valley, and Council Bluffs, the metropolis and county-seat of Pottawattamie County.

The initial point of the Union Pacific is in the state of Iowa, on the east side of the Missouri River, opposite the city of Omaha, and about midway between the river and Council Bluffs. Here has been erected a handsome depot. Leaving the Council Bluffs Transfer, we cross the Missouri River on the Union Pacific railroad bridge, which provides for the transcontinental traffic between the Atlantic and Pacific oceans.

Nebraska, according to the Indian derivation, is said to mean "water valley," or "shallow water," probably in reference to the river Platte. Omaha is the seat of Douglas County, and one of the most progressive cities of the west. It has a population of 102,555, and all the substantial and modern improvements of the times, as well as being an important business and manufacturing center.

Leaving Omaha we commence the journey from the Missouri River to the Rocky Mountains over "The Great Plains." South Omaha is four miles west, and is the third largest live stock market and meat packing point in the world. Continuing west we pass Fremont, where the Great Platte Valley spreads out wonderfully for the first 200 miles, varying in width from five to fifteen miles. North Bend is the second best town in Nebraska as a shipping point for stocks. Schuyler, the next place of importance, is the seat of Colfax County, and is the center of Nebraska's hay belt. Columbus, the seat of Platte County, is located at the junction of the Loup Fork with the Platte River. Grand Island is a division station of the Union Pacific, where extensive shops are maintained. Other stations of more or less importance are: Kearney, near which is located



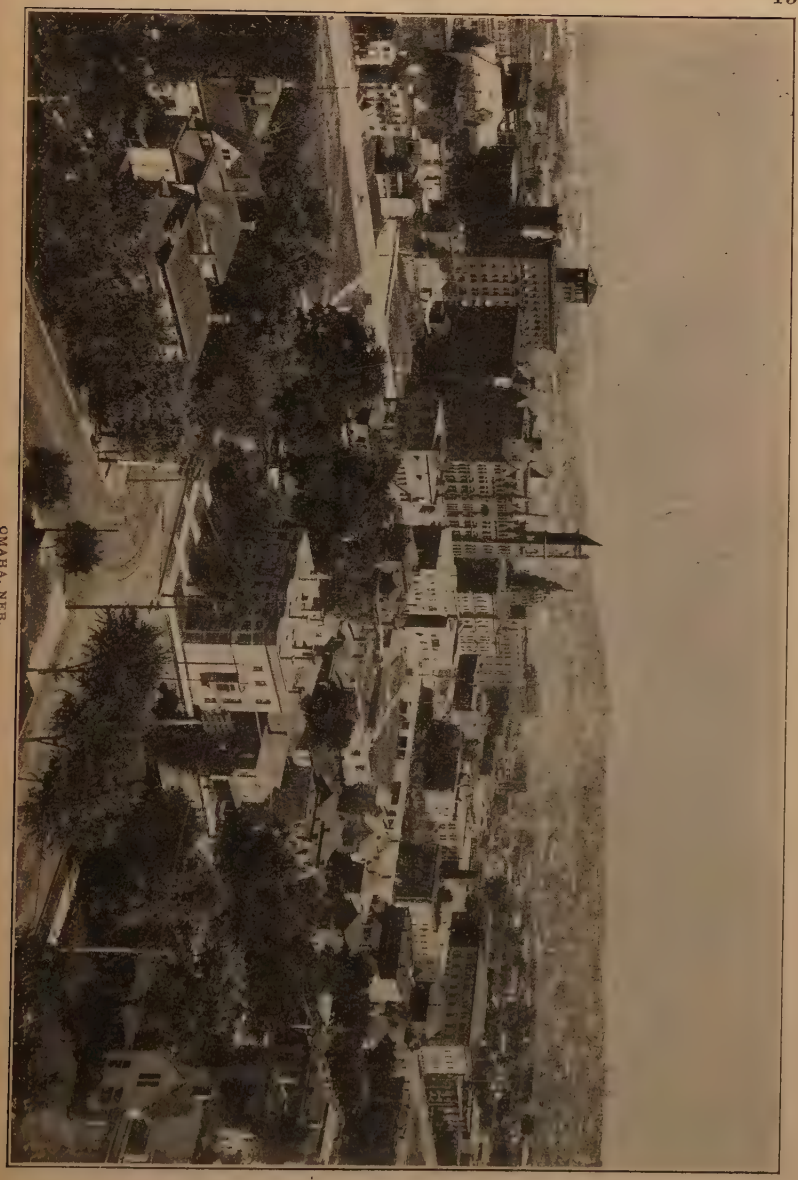
COUNCIL BLUFFS, IOWA.

the famous Watson Ranch of 10,000 acres; Lexington, formerly called Plumb Creek, which in pioneer days was often the scene of conflicts with the Indians; Brady Island, named in memory of an old time trapper who was murdered by one of his partners in 1847; North Platte, the seat of Lincoln County and headquarters for the largest live stock interests in the state; Julesburg, Sidney, and Smeed, the last station in Nebraska.

Wyoming was admitted into the Union July 10, 1890. It takes its name from the Indian word, "Maughwanwame," meaning plains, and first had its application in the Wyoming Valley of Pennsylvania. The stock raising industry comprises nearly one-half of the total wealth of the state. Other industries have increased faster than live stock raising, however, and the extension of railroads will give greater impetus to different interests.

The first city of consequence in Wyoming is Cheyenne, the capital of the state and seat of Laramie County. It is the center of large cattle and sheep industries, and the natural trading point for ranchmen and stock growers. Laramie is the second city in the state, and one of the largest and most attractive places on the line of the Union Pacific. Fort Laramie is located about thirty-four miles from Laramie, and was the first garrison post established in Wyoming. Other cities are: Rawlins, the seat of Carbon County, and one of the most important division points on the line; Rock Springs, celebrated for its coal; Green River, the seat of Sweetwater County; Granger, the junction point with the Oregon Short Line; and Evanston, the seat of Uintah County, situated just half way between the Missouri River and the Pacific Ocean. Eight miles west of Evanston is the dividing line between Wyoming and Utah.

Utah enjoys the distinction of being the only one of the western states and territories which was settled by a systematic process and for a definite purpose. One hundred and forty-



OMAHA, NEB.

three persons of the religion of Joseph Smith entered the Salt Lake Valley on July 24, 1847, and settled upon the site of the present city of Salt Lake. Five days later another party of 200 arrived. These bands of emigrants were under the leadership of Brigham Young, to whose genius and commanding ability is in a great measure due the rapid settlement which followed their event.

Utah is noted for its many scenic and natural beauties. Echo Canyon is a superb defile, and one of the masterpieces of nature. It has every feature of impressiveness—strong, determinate color, majestic forms, and a novel weirdness. The descent into the canyon usually begins after dinner at Evanston. The long hills of sandstone bluff on the right of the canyon, which are worn away until in the distance they have the appearance of old feudal castles of Europe, have been given the name of "Castle Rocks." About seven miles below can be seen a formation spanning a cleft in the wall on the right hand side. This is called Hanging Rock, one of the majesties of Echo Canyon.

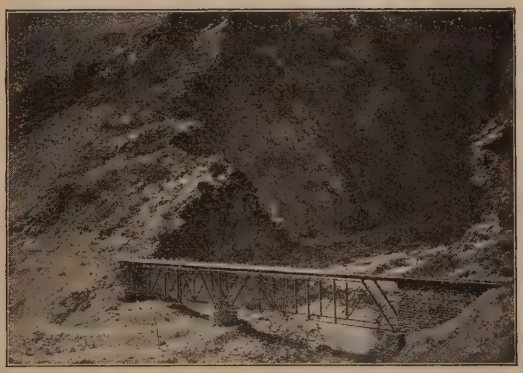
A little beyond Hanging Rock is "Jack in the Pulpit Rock." A round, gray column, flat on the surface, stands in front; this is the pulpit, while in close proximity rises "Jack," propounding the law and gospel to his auditors.

Weber Canyon comprises a succession of true mountain scenery—mighty gateways, long, narrow alleys, great peaks, heights crested with pine and aspen, and belts, bastions, baricans, towers, and domes of rock.

Echo City is a beautiful spot, nestled between the hills. Close to Echo is the curious group of rocks called "The Witches." Wilhelmina Pass is a narrow gateway, between a huge, square bluff on the left, and a hill on the right, surmounted by a vast mass of reddish gray rock, shaped exactly like a castle keep. A few hundred feet further on is "The Devil's Slide," the world's famous and most wonderful of all natural curiosities.

Ogden is the seat of Weber County, and is situated one mile

east of the station on the Ogden River, at the base of the Wasatch Mountains. Passengers who desire to visit Salt Lake City, thirty-six miles distant, will find a train waiting at the station. It will leave as soon as mails, express, and baggage can be transferred, about thirty minutes. All trains arrive and depart from the west side of the new Union Station.



DEVIL'S GATE—ENTRANCE TO WEBER CANON.

OMAHA, NEB.

GRANGER TO HUNTINGTON.

WYOMING.

Granger.—This is the eastern terminus of the Oregon Short Line Railroad and its eastern point of connection with the Union Pacific Railroad. Beyond this fact, the town has little claim to importance.

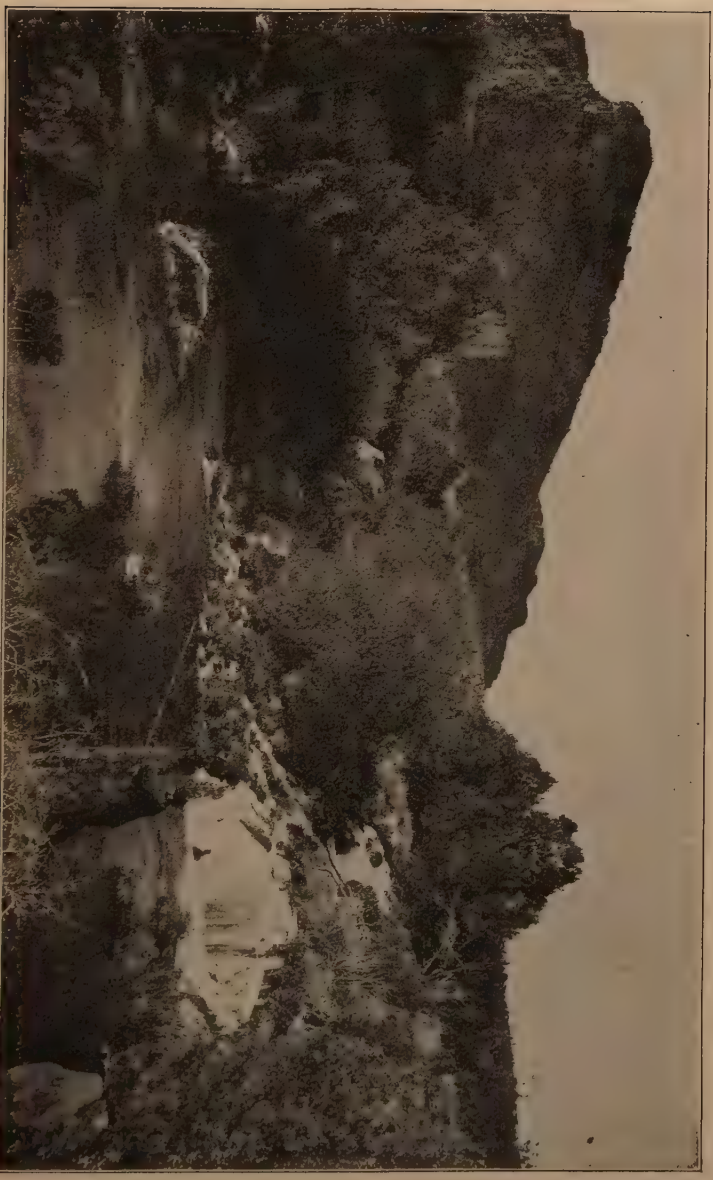
Opal.—Opal is situated twenty-five miles up the valley of Hams Fork. Like the majority of Western towns, this place is of much more importance than appearances would indicate. Opal is the railroad center for all the inland towns for one hundred and fifty miles to the north, and consequently it is a heavy shipping point.

Diamondville.—Thirty-nine miles from Granger, is the next station of importance. The coal mines operated by the Diamond Coal Company at this place are the chief source of supply for the mammoth smelters at Anaconda, Mont.

Kemmerer.—Kemmerer is but one mile from Diamondville and is the center of a large coal region; the combined output of Diamondville, Kemmerer, Cumberland and Glencoe (the two latter places located on a branch line a few miles south of Kemmerer) amounting to 5,000 cars per month of the best soft coal found in the West.

Hodge's Pass tunnel, the highest point on the Oregon Short Line (7,034 feet above the sea level), is only a short distance from Kemmerer. From this point the western slope of the range affords a practically continuous down hill run to Huntington on the Snake River, 500 miles away.

Fossil.—Is ten miles beyond Kemmerer and fifty miles



ON ALPHEUS CREEK, BLUE LAKES, IDAHO.

from Granger. This town offers an unusually attractive field to the hunter of pre-historic relics. Skeletons of unknown animals, supposed to have been indigenous to the tropic zone, have been unearthed in the vicinity, but impressions of deep-sea fish, in the limestone, are more common.

IDAHO.

Montpelier.—Passing Sage, Cokeville and Dingle, and skirting the marshes at the north of Bear Lake, we come to Montpelier.

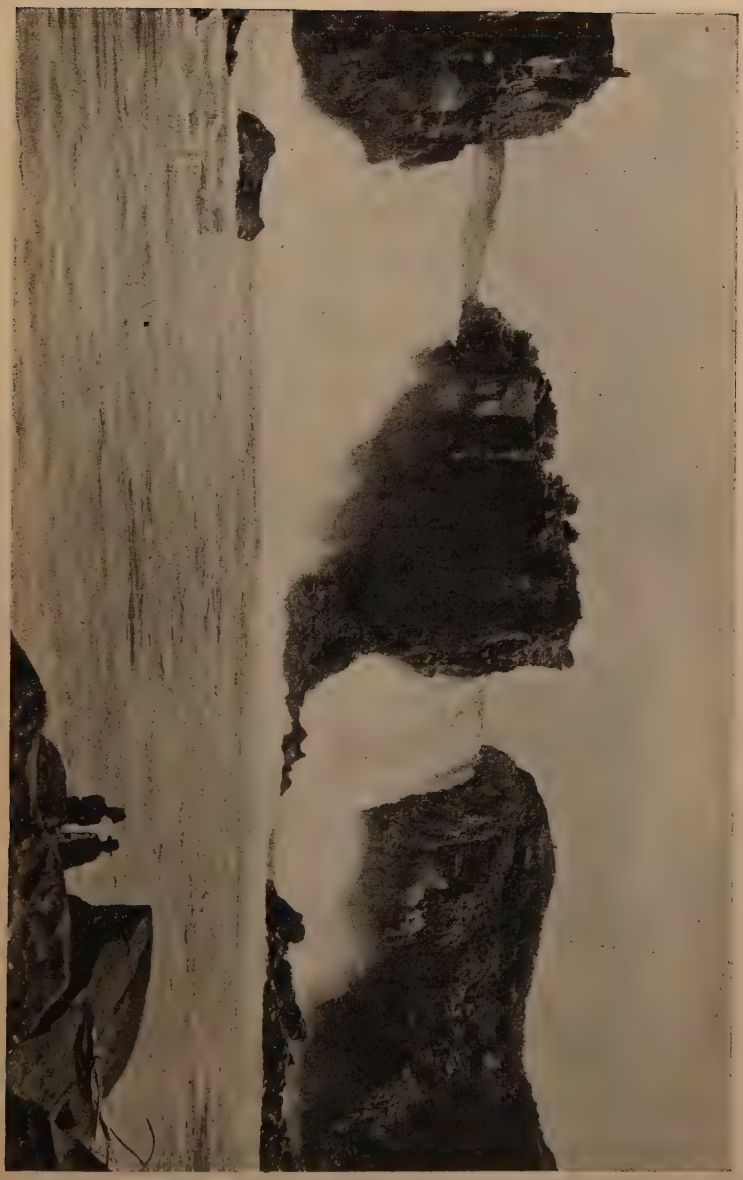
This is a busy little place of 2,000 population, and the terminal of the first railroad division. It is 115 miles from Granger and ten miles from Paris, the county seat.

Soda Springs.—The splendid Idan-Ha mineral water used extensively in the West has done not a little to make Soda Springs famous. There is a good hotel, and excellent fishing in the neighborhood. It is a popular vacation resort for people from Salt Lake. An extensive irrigation system, headed by Denver capitalists, is nearing completion, and water will be delivered to a large area of the surrounding country during the summer of 1903.

Soda Springs ships 1,000 cars of sheep yearly, and two and a quarter million pounds of wool—direct evidence that it is more or less interested in sheep raising.

The road follows the Bear River for a considerable distance, then crosses over into the valley of the Portneuf and runs parallel with that stream to McCammon, 191 miles from Granger, and from there to Pocatello, twenty-three miles beyond.

Pocatello.—This is the county seat of Bannock County and the second city in size in the state. Elevation, 4,460 feet. Population, 5,000. The town was originally built in the heart of the Fort Hall Indian Reservation, and its steady growth soon demonstrated the pressing need for larger quarters, which were secured when, in the summer of 1902, the reser-



TWIN FALLS, SNAKE RIVER, IDAHO.

vation was thrown open to settlement. The city has already commenced to feel the good effect of the improvement.

This is an important railroad center, being at the intersection of the two main trunks of the Oregon Short Line, one of which connects points on the Missouri River with the Pacific Coast, the other, Salt Lake City with Butte, Mont. Here are located the main shops of the Company, which are now being re-built at a cost of $1,250,000, and which will ultimately employ 1,000 men.

American Falls.—After leaving Pocatello, the country changes into a level prairie and a short run brings the traveler to American Falls, where the Snake River is crossed. The Falls are quite plainly seen from the bridge. The power plant at this point supplies electricity for the lighting of Pocatello. Extensive irrigation systems are also under way to utilize the water.

For the next seventy-five miles, the country is very sparsely settled, though supporting thousands of sheep.

Minidoka.—This is the shipping point for Albion, Idaho.

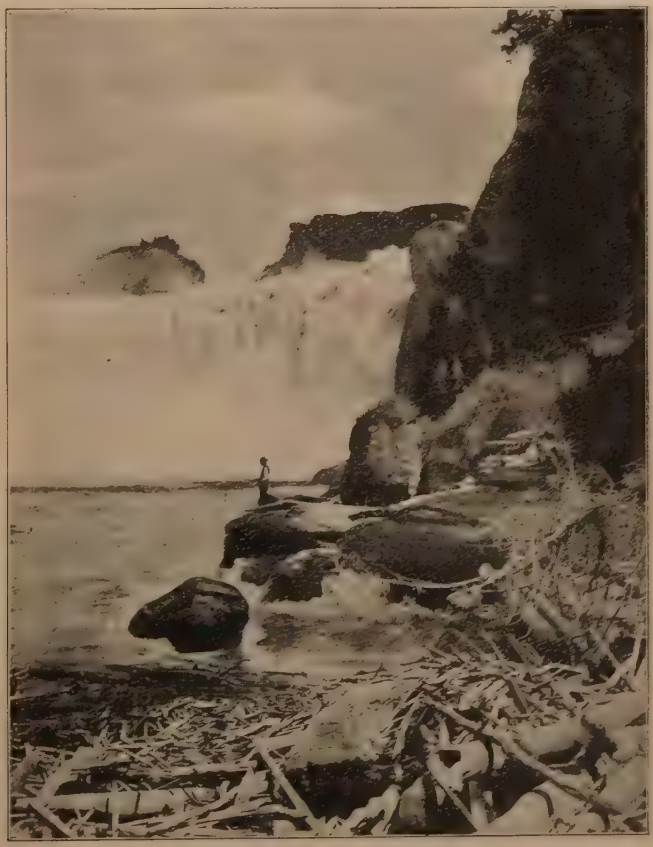
Kimama.—Is the railroad station for the Twin Falls Irrigation Co.'s lands along the Snake River. This company is conducting one of the largest enterprises of the kind in the world and proposes to reclaim 250,000 acres of now arid land.

Whisking by a number of sign posts, bearing not unmusical Indian names, such as Owinza, Waucanza, and so forth, we reach

Shoshone.—Shoshone is the county seat of Lincoln County and is situated in the center of the great lava desert. Wool growing is the principal industry.

The great attraction for sight-seers is Shoshone Falls, about twenty-five miles south of the city. The appreciative few who have visited them declare they have never seen their equal. Naturally, comparisons with Niagara are instantly made. Lacking the volume of water in the better

known cataract, Shoshone yet surpasses it in picturesque grandeur. The semi-circle of the brink measures over 900 feet, with a sheer fall of 221 feet; below the Falls from the water's edge to the top of the Canyon, it is 1,200 feet.



BELOW SHOSHONE FALLS, IDAHO.

Down this gorge sweeps the grand volume of Snake River, fathoms deep between the lava walls.

A few miles below the Falls are the Blue Lakes. Here is the home of Mr. I. B. Perrine. This public-spirited gentleman made large contributions of the fruits of his orchard

to the Idaho State exhibits at all the great expositions—Chicago, Omaha, Buffalo and Paris, and carried off enough first prizes to give Idaho's horticultural products a world-wide reputation.

The Wood River branch of the Oregon Short Line diverges at Shoshone and extends seventy miles to the north. In the vicinity of Bellevue, Hailey and Ketchum, considerable mining is being done. This region also affords attractions for the tourist and the sportsman. Hailey, Hot Springs and Guyer Hot Springs, at Hailey and Ketchum, respectively, possess more than ordinary medicinal merit, and Silver Creek is reputed to afford the finest trout fishing in the world. This section has also large live stock interests. Hailey and Ketchum ship annually 1,500 cars of sheep.

Glenn's Ferry.—This is another division point on the railroad and is the scene of a considerable irrigation enterprise.

Mountain Home.—The county seat of Elmore County. Is the railroad station for a large mining area sixty miles to the north. Farming and stockraising are carried on extensively. It is also a prominent wool shipping point, two million pounds being the usual yearly clip.

Nampa.—Four hundred and fifty-nine miles from Granger, marks the entrance to the great fruit belt of Idaho. Nampa owes its prosperity to Col. W. H. Dewey. He built the railroad south to Murphy, a distance of thirty-one miles, on the way to the great mining district of Owyhee County, and has more recently completed another line twenty-seven miles north to Emmett to reach the magnificent timber lands on the Payette River. His hotel, built by him at a cost of $200,000, would be a credit to any city in the country.

The town already supports several industries and is trying to secure a beet-sugar factory, a wood-working establishment, and other enterprises. Hundreds of new settlers

have moved into the vicinity within the last year or two and with improved irrigation facilities, which will come sooner or later, it is hard to limit the possibilities of this bustling little place with its wide-awake citizens behind it.

Meridian.—Meridian is half way between Nampa and Boise. It is surrounded by a growing farming community.

Boise.—Capital of Idaho; population, 8,068. Boise is one of the oldest towns in the west, having been established

NATATORIUM, BOISE.

long before railroads were dreamed of in that section of the country. Its growth has been substantial and it is now one of the prettiest and most home-like cities in the country. Its paved business streets, graced with handsome buildings, create a decidedly favorable impression on the visitor.

The principal industries carried on in the vicinity are mining, fruit growing, and cattle and sheep raising. The clip of wool for 1902 amounted to 1,500,000 pounds.

Boise is probably the only city in the world whose building are heated by natural hot water coming from hot

springs. The Natatorium is one of the very finest bathing resorts in the inter-mountain country.

Returning again to the main line, and proceeding westward nine miles, we reach Caldwell.

Caldwell.—A thriving little place of 1,000 population, supported by a stockraising and agricultural community. Over two million pounds of wool were shipped from this place during the season of 1902.

Parma.—A new town drawing its support from a well settled farming district.

Arcadia.—A short distance above Arcadia the Snake River is crossed and the traveler finds himself in Oregon, but ten miles farther on the train crosses the Snake again and dodges back into Idaho. Arcadia is of recent growth, having been brought into existence largely by the establishment of a French colony.

Ontario.—Ontario ships more cattle and horses from the range than any other place in the west. During the three summer months nearly a thousand cars of stock leave the pens at this point for the markets of the east. The wool business is almost equally important, showing a production of two and a quarter million pounds for 1902.

Agriculture is receiving more attention than formerly and there are about 10,000 acres under cultivation at this time.

Payette.—Enviable indeed is Payette, surrounded by thousands of acres of land of unsurpassed fertility; bountifully watered by the Payette River.

The emigration to this valley in the past few years has been marvelous. Fruit growing is the largest and most profitable industry; cantaloupes produced here have made a wide and favorable reputation, and large quantities of them are grown and shipped as far east as Chicago. They are equal, if not superior, to the Rocky Ford melons, and ripen about two weeks earlier.

PRUNE PLUM, IDAHO.

The lumber business at this place is growing; magnificent forests of fir and yellow pine are found at the head waters of the Payette River. The logs are floated down the stream to the saw-mills at Payette.

Weiser.—Population, 2,000. Weiser is surrounded by a thriving farming and fruit growing community and is the outlet for the upper valley of the Weiser River, rich in timber, stockraising, and particularly in the copper mines of the Seven Devils district.

The live stock business is also an important factor in Weiser's prosperity. By a slight margin, Weiser leads all other Oregon Short Line stations in wool shipments for the year 1902, the exact amount being 2,266,572 pounds.

The total wool production of that part of Idaho tributary to the Oregon Short Line Railroad for the year 1902, was 21,163,105 pounds, requiring 785 cars for its transportation.

Huntington.—Two miles east of Weiser the Snake River is crossed for the fourth and last time, and at Huntington, Oregon, the Pacific Coast passenger is turned over to the Oregon Railroad & Navigation Company.

The population of the place is about 850. In addition to being the terminal of two railroads, Huntington draws support from a large area devoted to stockraising.

Salt Lake City to Butte.

UTAH.

Salt Lake City.—The "City of the Saints," or "Zion," as it is sometimes called, is the capital of Utah and has a population of 87,000. It was founded by the Mormon Pioneers, who, led by Brigham Young, entered the Valley of the Great Salt Lake, July 24, 1847. This hardy little band of 140 men and three women laid the foundations of a city which is today the center of a thriving country over a thousand miles in diameter. The city, which is situated 4,261 feet above sea level, is the metropolis of the inter-mountain region. Its more important industries are mining, agriculture, horticulture, the manufacture of sugar, salt refining, brick-making, smelting, the manufacture of mining and milling machinery, and a dozen other branches of business connected with the development and reclamation of the arid west.

Salt Lake City has 132 miles of street railway, and all the streets, as originally laid out under the supervision of Brigham Young, are 132 feet wide, for the greater part lined with double avenues of trees and flanked by purling artificial streams brought from the melting snows of the majestic Wasatch Range, which shelters the city to the east and north.

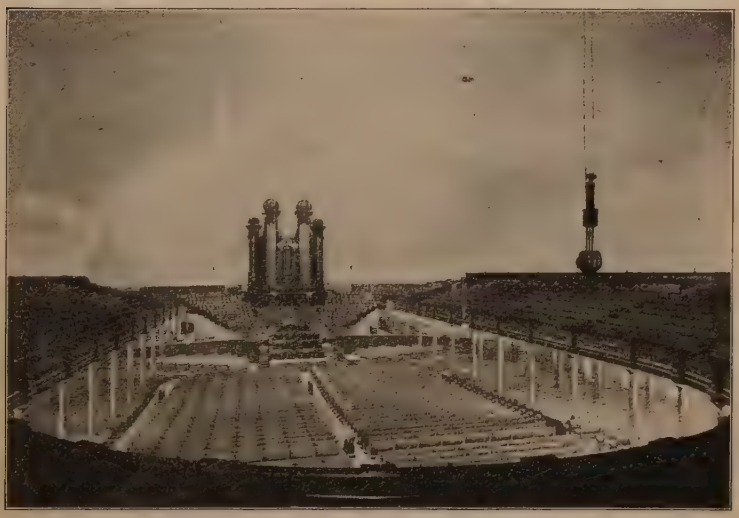
Fifteen banks do business in the capital, having combined deposits of over $20,000,000. Aside from the splendid educational advantages, with the up-to-date school houses and universities that have been erected during the past ten years, Salt Lake City is an ideal residential city. It has

two evening and two morning papers, a modern sewage system and a successfully conducted sewage farm, splendid water supply of a quality unexcelled, four big pleasure resorts, two theaters, five hospitals, three large modern hotels and a number of smaller ones, three natural hot springs baths, equipped with plunge pools, private baths and massage parlors, a delightful public park, with free music, a speedway for horsemen, two bicycle and horse racing

TEMPLE BLOCK, SALT LAKE CITY.

tracks, several social and intellectual clubs, while, when it comes to a climate for those suffering from pulmonary diseases, Salt Lake City offers the weak-chested a very elixir of life. The average mean range of temperature is 51.5, and the average daily range is 18.6. Those troubled with rheumatism, kidney troubles, and obstinate skin diseases hold Salt Lake in high esteem after having taken a course of the hot curative waters that within the city limits issue scalding from nature's caldrons in the bowels of the earth.

Salt Lake is known as the Mecca of the transcontinental tourist. The big Mormon Temple is the first object of interest that arrests the attention of the traveler. The corner stone of this white granite structure was laid by Brigham Young, April 16, 1852. It was finished April 6, 1892, and cost about $3,000,000. The building is 196 feet long by ninety-nine feet wide. The foundation walls are ten feet thick. The main portion of the building is 100 feet high,



INTERIOR OF THE TABERNACLE, SALT LAKE CITY.

and the central eastern tower is 235 feet in height. The Tabernacle, which contains one of the finest organs in the world, was commenced April 5, 1865, and completed two and one-half years later at a cost of $300,000. The building will seat 12,000 people, and next to the Grand Central depot, at New York, has the largest self-sustaining roof on the continent. The Assembly Hall, Eagle Gate, the Lion House, Bee Hive House, Amelia Palace, Tithing Office, and other historic structures, are all situated within a block of the Temple. The Salt Palace, the only building of its kind

in the world, is another striking edifice of interest, as is the older place of amusement, the Salt Lake Theatre, built by Brigham Young in 1862, and the fifth oldest standing theatre in the United States.

The Great Salt Lake, with its 2,500 square miles of ultra saline waters, is situated sixteen miles west of the city. Trains to the bathing resorts at Garfield and Saltair run every day in the year, and in the season at every hour during the day. Saltair is one of the most unique pleasure resorts in the country and boasts the largest dancing pavilion in the world.

MORMON TABERNACLE, SALT LAKE CITY.

The Oregon Short Line Railroad connects Salt Lake City with the great transcontinental route formed by the junction at Ogden of the Union Pacific and Southern Pacific systems.

From Salt Lake City to Ogden the country is practically a continuation of small farms, and the green fields and shady trees are restful and pleasing to the eye. In traversing this delightful oasis, the towns of Woods Cross, Centreville, Farmington, Kaysville and Layton are passed.

Leaving Ogden, another charming bit of country, similar to the one just passed, is presented to the view of the traveler.

MORMON TEMPLE, SALT LAKE CITY, UTAH.

Hot Springs.—Nine miles from Ogden. Here are located springs possessing peculiar curative power, especially beneficial to those afflicted with rheumatism. The accommodations at this point are plain, but comfortable.

Brigham.—Twenty-one miles from Ogden, the first station of importance, is very prettily located at the foot of the stately Wasatch range of mountains. Fruit-raising is one of the principal occupations, as the traveler will very

SALTAIR BEACH.

readily judge from the number of boys and girls who invade the train, offering for sale almost every kind of fruit in its season.

The lowlands at the mouth of Bear River afford unusually good duck hunting. The number of birds making their home in the marshes is almost incredible, and when rising from the water the whirr of their wings can best be likened to the roar of a railroad train.

Passing farther north through Honeyville, Dewey, and

Collinston, the traveler will observe that the country gradually becomes more sparsely settled. The lack of water, which has retarded emigration, will be supplied when the east side canal from Bear River is completed.

Between Collinston and Cache Junction the railroad passes through Bear River Canyon, affording a number of picturesque views, as the train crawls over spider-like bridges and plunges or emerges suddenly from some tunnel. While passing through the canyon, one can obtain a splen-

VIEW IN OGDEN CANYON.

did bird's eye view of the method by which water is taken from the streams for irrigation purposes. The dam will be noticed, and, close by, the head-gate of the Bear River Canal on the opposite side of the river. The course of the canal below can be traced by the excavations, although at times it is hidden from view as the water passes through tunnels which pierce the solid rock. Water from this canal is carried to farms on the western side of the valley for a distance of forty miles. A similar canal is being constructed on the east side of the canyon, following the railroad track.

Logan.—Logan is the county seat of Cache County, the fourth largest city in the state. It is located on a branch line diverging at Cache Junction. Its educational facilities are unusual. In addition to excellent public schools, the State Agricultural College and Experimental Station, the Brigham Young College and the New Jersey Academy are located here. Among the industries is a beet-sugar factory.

From Cache Junction to McCammon the valley is given over largely to stockraising and ranching. General farming is carried on a few miles back from the railroad near the base of the mountains.

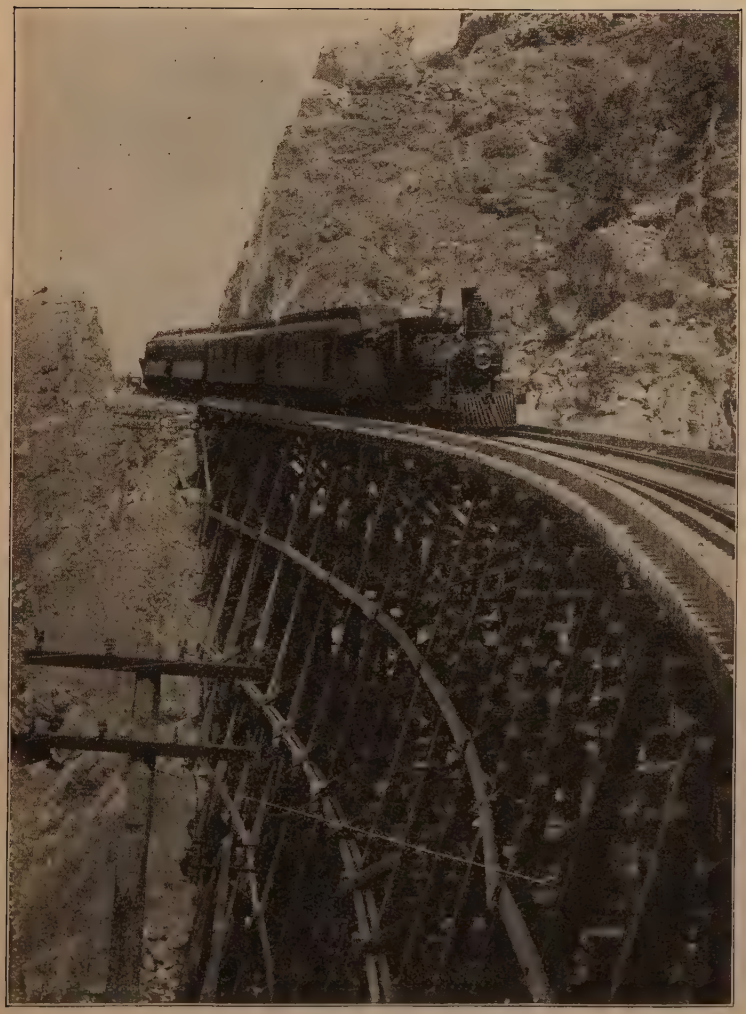
IDAHO.

Pocatello.—Pocatello, the main point of intersection with the east and west line, is described in the article treating of the route from Granger to Huntington.

Ross Fork.—This is the station for the Fort Hall Indian Reservation, and if the tourist is quick with his kodak he may get a snap shot of Poor Lo; at the same time, it will be well to avoid the error made by a certain party of tourists, who, upon spying a couple of Japanese section hands, exclaimed, "Oh, there are the first Indians we have seen!" and promptly snapped them, to take back to show their friends in the east as a true picture of the noble red man on his native heath.

Blackfoot.—The county seat of Bingham County; also the seat of the United States Land Office of the largest district in the state. The State Insane Asylum is located here, and also the Salmon River Branch of the Oregon Short Line diverges at this point and extends eighty-five miles to the northwest.

Mackay.—Terminus of the Salmon River Branch. The property of the White Knob Copper Co., one of the prime movers in which was the late John W. Mackay, after whom the town was named, is close by. The company's smelter is located at this place. Mackay has the distinction of be-



AN O. S. L. TRAIN IN BEAR RIVER CANYON.

ing probably the only mining camp on record that does not include one or more saloons among its assets.

Idaho Falls.—A progressive city of 2,000, with great prospects before it. It is situated in the fertile Snake River Valley and it ships annually in the neighborhood of 750 cars of potatoes, besides hundreds of cars of grain and other produce. The city is supplied with water and electric light plants. A mammoth beet-sugar factory will be built there during the summer of 1903.

Rigby and Rexburg.—Rigby and Rexburg, located on the branch line connecting with the main line at Idaho Falls, are prosperous farming communities that have taken on new life since being supplied with railroad facilities.

St. Anthony.—The terminus of the branch road. General farming is carried on in the valley and stockraising on the range adjoining. It is the outfitting point for the Jackson Hole country, the finest hunting ground in the world. Arrangements can be made here for camping tours to the Yellowstone Park.

Market Lake.—Two hundred and one miles from Ogden. Considerable land is under irrigation near by, but the principal occupation is stockraising.

Here we leave the valley of the Snake, and passing Camas, Dubois and Spencer, start on the long climb to the top of the Continental Divide. The crest is reached at Monida.

Monida.—Altitude, 6,807 feet. The name is composed of the first syllables of the words "Montana" and "Idaho," suggested by the location of the place on the state line.

YELLOWSTONE NATIONAL PARK.

The Monida and Yellowstone Stage Line runs from Monida to the wonderful Yellowstone National Park. During the park season, which is approximately from June 1st to September 15th of each year, stages leave daily. The equipment is new and the service is deservedly popular. Messrs.

Humphrey and Haynes, the proprietors, have long been identified with the Park, and have left nothing undone to make the trip comfortable and thoroughly enjoyable.

FRANK RANDALL.
A Carlisle Graduate, Who Prefers the Indian Dress Because it is Picturesque and Comfortable.

PARK ITINERARY.—Leaving Salt Lake, Ogden or Pocatello on the day train, one can reach Monida the same evening and put up over night at the plain but comfortable little hotel.

First Day.—Monida to Dwelles. The route is through

Centennial Valley, Red Rock Lakes (lunch station), Alaska Basin, over the range at Red Rock Pass to Henry Lake, Idaho, in plain view of the grand Teton Mountains, and back across the divide at Targhe Pass into Madison Basin to Grayling Inn, the night station on the western edge of the reservation.

Congressman Driggs, in writing of his Park visit, says: "The novelty of the stay at Dwelles Log Cabin Inn more than repays one for the ride across the plains."

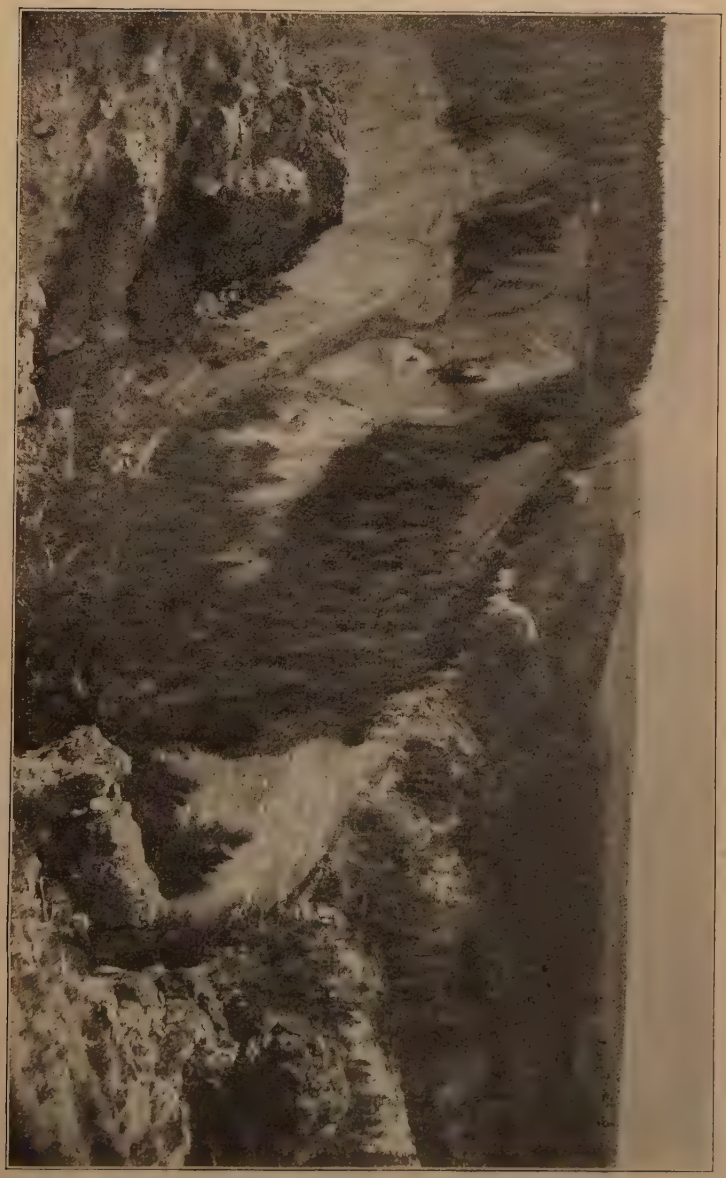
Second Day.—Dwelles to Fountain. Entering the Reservation at Christmas Tree Park, the trip includes Riverside Military Station on the beautiful Madison River, Madison Canyon, Falls of the Fire Hole, Lower Geyser Basin, Fountain Geyser, Paint Pots, etc.

Third Day.—Fountain to Upper Geyser Basin. We are now in the heart of the geyser region and visit Excelsior Geyser (Hell's Half Acre), Morning Glory, Black Sand Basin, Grotto, Giant, Castle, Bee Hive, Old Faithful Geyser, and many others.

Fourth Day.—Geysers to the Lake. The Continental Divide is twice crossed. On the way Keppler Cascade and Lone Star Geyser are passed, and distant views of Shoshone Lake and the Teton Mountains are seen from the Continental Divide. A halt for lunch is made at Yellowstone Lake. One can take a steamer on Yellowstone Lake from West Thumb station to the Lake Hotel by paying the Boat Company $3.00, or can continue along the lake shore in the coach.

Fifth Day.—Lake to Canyon. This trip is down the valley of the Yellowstone River, past Mud Geysers, through Hayden Valley, with lunch at the Canyon Hotel. The crowning glories of the Park are beheld at this point, the Upper and Lower Falls of the Grand Canyon of the Yellowstone.

Sixth Day.—Canyon to Dwelles. Turning westward to visit Virginia Cascades, Norris Geyser Basin, Gibbon Can-



UPPER FALLS OF THE YELLOWSTONE.

yon and Falls, we retrace our steps along the beautiful Madison River and again spend the night at Dwelles.

Seventh Day.—Dwelles to Monida. Arriving at Ogden or Salt Lake early the following morning.

To holders of Pacific Coast excursion tickets an unusually low rate of $49.50 is made from either Ogden or Pocatello to the Park and return via the above route. The rate not only includes rail and stage transportation, but also hotel accommodations beyond Monida and in the Park, for the tour specified above.

The trip provided for by tourist tickets from the East is somewhat different. From the Canyon Hotel, the route is via Gardiner instead of Monida, and at Gardiner connections are made with the Northern Pacific Railroad for the east, or for Butte, in case one returns by way of the Oregon Short Line Railroad.

MONTANA.

Lima.—Leaving the summit, we drop rapidly, passing Lima, a division point on the railroad, and stopping next at Red Rock.

Red Rock.—The center of extensive stock interests; very considerable shipments of cattle, horses and sheep being made from this point. It is the nearest railroad and shipping station for Lemhi County, Idaho, and the extensive gold and copper mining districts around Salmon City, Blackbird, and Thunder Mountain.

Still continuing our descent, we reach Dillon.

Dillon.—Population, 1,530. It is the county seat of Beaverhead county and is beautifully laid out in one of the prettiest of mountain valleys. It is the metropolis of a region two thousand square miles in extent and is the distributing point for the richest and most productive section in the State of Montana.

Climbing over Apex Hill, the road leads into the Big Hole River Valley.

SOME OF THE YELLOWSTONE PARK GEYSERS.

Melrose.—This is an important stockraising center, and the Canyon of the Big Hole River, at this point, is a favorite resort for the fishermen of Butte.

The last barrier that lies between us and our destination, Feely Hill, is soon surmounted, and a short run of nine miles brings us to Silver Bow, where connection is made with the Butte, Anaconda & Pacific Railway for Anaconda, Mont. Seven miles farther on we alight at Butte.

Butte.—Population, 35,000. This is the commercial center of Montana and the greatest mining camp in America. At this point the Oregon Short Line connects with both the Great Northern and Northern Pacific Railways.

En Route to Portland.

Via Huntington and Pendleton.

From Huntington, Oregon, the traveler continues his journey to Portland, via the lines of the Oregon Railroad & Navigation Company, and those who have taken this route to Portland are always enthusiastic over it. For natural scenery, the Pacific Northwest can nowhere be surpassed. From the sources of the Columbia River, through an area of nearly 500,000 square miles, to Astoria, where it pours its waters into the Pacific, is one succession of magnificent scenes. Mountain peaks, whose snow-capped summits are white even in July and August; fertile valleys, that yield rich harvests of fruit and golden grain; forests, even yet the home of the Indian; mountain lakes and trout streams; massive walls of rock, over which plunge occasional falls and cataracts; woods and grasses and blooming flowers at Christmas time; fountains of wondrous healing, and long stretches of sandy beaches, all combine to make this region an ideal resort for the seeker for health or pleasure.

Huntington to Pendleton.

OREGON.

Huntington.—The eastern terminus of the main line of The Oregon Railroad & Navigation Company. Huntington is 404 miles from Portland. The town has about 900 population, churches of various denominations, a good graded school, three hotels, a bank, a live newspaper, and business houses in all lines of trade. It carries on a heavy stage and wagon trade with many parts of Malheur County, and also

with Grant, Harney and Lake counties. The Oregon Lime & Marble Company, three and one-half miles west of town, manufactures and ships large quantities of lime, plaster and gypsum. The Eastern Oregon Land & Irrigation Company, with a $500,000 capital, is located at Huntington. The Pomeroy Dredger Mining Plant is operated on a large scale at Weatherby, on Burnt River, a few miles west.

Malheur.—In the early days, when the tide of immigration set in towards Western Oregon, little was known of the resources of Malheur County and the surrounding country. But in 1866 gold was discovered in the northern end of the county, and El Dorado was founded. The town passed away, and later Malheur City came into existence. Placer mining was followed with profitable results, and quartz mining is now giving the place new life.

Agriculture in Malheur is yet in its infancy. Its growth and its future are summed up in one word—Water. Perhaps nowhere in the so-called arid lands of the west are better opportunities offered for irrigation. Reservoir sites are numerous and water is plentiful. The country is also adapted to stock raising. Prospecting is going on in many parts of the country for oil, and it is said the prospects are excellent. Numerous companies have been formed to push investigation.

Vale.—Sixteen miles from the railroad is the prosperous and enterprising town of Vale, the county seat of Malheur County. A new court-house has been erected, built of native Malheur sandstone. The stone, although soft when taken from its native bed, hardens on exposure, becomes as durable as any granite, and is absolutely fireproof. Vale is the banking and commercial center of the county. It is well equipped with hotels, has a good newspaper and a bank. The magnesia hot springs at Vale are one of the most interesting natural wonders of the state. They are located at intervals along the bank of the Malheur River,

AN O. R. & N. CO. TRAIN IN THE BLUE MOUNTAINS.

and come bubbling up at the water's edge at a temperature of 212°.

The present population of Malheur County is about 6,000, but it is safe to say that within the next decade it will be over 20,000. The county is an empire in extent and when the land is properly irrigated, the mines properly worked, and the stock industry pushed as it can be, a great change will take place.

Baker City.—After passing through forty-seven miles of

A HERD OF ELK.

interesting country, Baker City, the county seat of Baker County, is reached. Both town and county were named for Oregon's soldier-statesman, Gen. E. D. Baker, who was killed at Ball's Bluff. Baker City is the center and metropolis of the Eastern Oregon gold fields, comprising an area of 14,000 square miles. The altitude of the city is 3,440 feet above the sea level. Its climate is unsurpassable. In 1902 the city had a population of over 8,000, and it is rapidly growing. Baker City has ore-sampling works and a custom mill, a $150,000 gravity water system, gas and electric light

THE NEEDLES AND O., R. & N. CO. ROAD FROM THE MOUNTAINS.

systems, six saw and planing mills, with a daily capacity of 175,000 feet of lumber or 55,000,000 feet a year; two breweries costing $75,000; two foundries and machine shops, a telephone system, a Chamber of Commerce, churches of all denominations, a Masonic Temple and halls of all other orders, a $35,000 opera house, two daily newspapers, free postal delivery and the third postoffice in importance in the state; a superb natatorium, and a $60,000 hospital. The two banks of the city carry over $2,000,000 of deposits. The city has a number of hotels, a new one having been built that is equal to many in cities five times its size. Baker County has agricultural and mineral resources yet undeveloped. There are thousands of square miles of valuable mineral beds awaiting the prospector and miner and in 1902 there were over a million acres of government land unclaimed. Scarcely a fifth of the tillable land is under cultivation and the total population is less than 20,000. Many irrigation projects are under way.

Sumpter.—West of Baker City is Sumpter, the famous mining town. During the past few years the town has had a wonderful growth. Several mines have taken out $100,000 per month during the past year, and the record the next few years will be far greater. A new smelter is being built, and a line from Sumpter to the mines of the upper valley will soon be constructed.

Eagle Valley.—Situated forty-five miles due east from Baker City—thirty-six miles by air line. One of the most productive valleys of the state. In width, it varies from a few hundred yards in the canyon, to five miles, and is six miles in length. The valley contains 9,000 acres; 5,000 acres being under cultivation. Irrigation is a necessity, but an unlimited amount of water can be secured for this purpose from Eagle Creek. The best land, at present, commands $100 and more an acre, but there is land that can be had from $15 up. Cattle and sheep raising form the principal industry. However, the soil cannot be surpassed for pro-

ductiveness. Fruits of every variety are grown—pears, plums, apricots, nectarines, the finest quality of summer, fall and winter apples, quinces, canteloupes and watermelons, raspberries, blackberries and strawberries. Tomatoes and other vegetables are raised in large quantities, and wheat, rye, barley, oats, alfalfa, timothy and millet have made remarkable records. Richland, with a population of 200, and Newbridge, are the principal towns.

A PINE VALLEY PRUNE TREE.

Pine Valley.—Fifteen miles north of Eagle Valley is Pine Valley, which varies from a few hundred yards to four miles in width, and is fifteen miles in length. Pine is the principal town, having a population of 150. Halfway and Carson are small places. Cornucopia, the well-known mining town, stands at one end of the valley. Pine Creek furnishes an ample supply of water for irrigation. Of the 18,000 acres in the valley, over 12,000 are under cultivation. The price of land is about the same as that in Eagle Valley. Pine

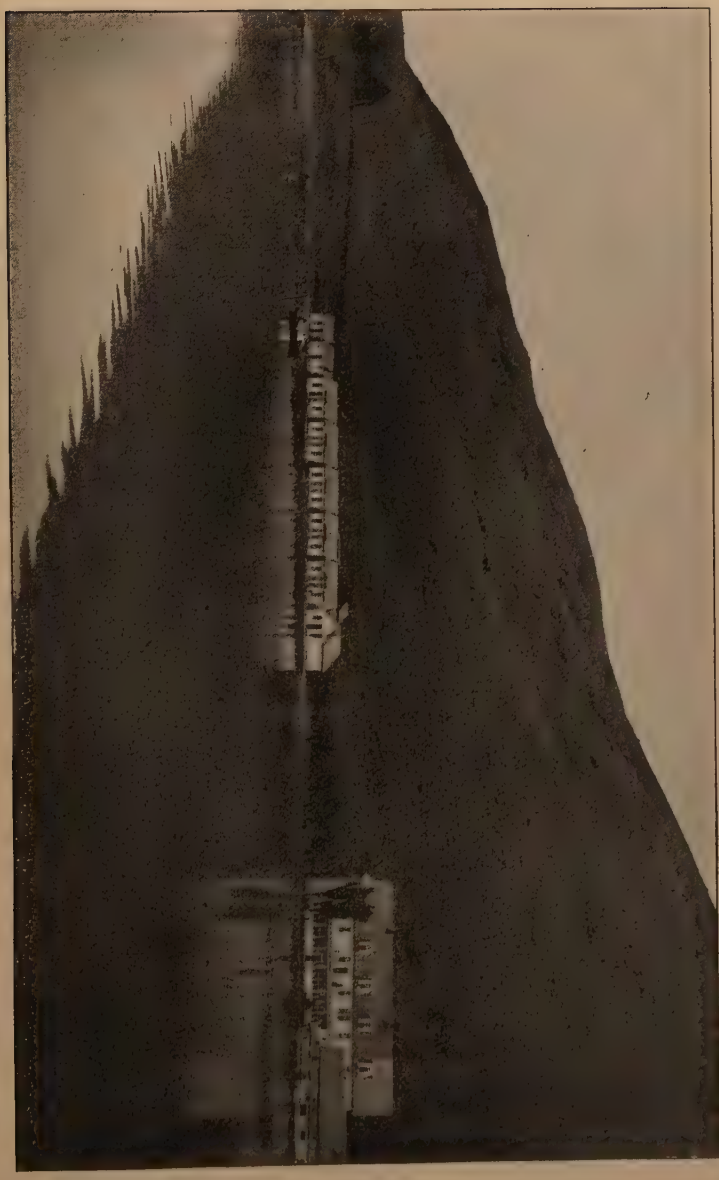
Valley is especially noted for its fine prunes and winter apples.

There are other rich valleys along Eagle and Pine Creeks and the Powder River. Among all the foot hills of the Eagle Mountains and Snake River Mountains, bunch grass grows luxuriantly. Upon this are pastured thousands of cattle and sheep, which are wintered in Eagle and Pine

CANBY LIGHT, MOUTH OF THE COLUMBIA RIVER.

valleys, thus creating a market for the hay and grains raised in these valleys. The rich mines of Seven Devils and Snake River lie close to the east, and these, also, to a certain extent, form a market for the products of the valleys. A reasonable amount of the valley products is consumed in the mining districts of Eagle Mountains, Cornucopia and Sparta.

La Grande.—One of the most prosperous small cities of Oregon, with a population of over 2,290. It is located in the



HOT LAKE, EASTERN OREGON.

heart of the celebrated Grande Ronde Valley, one of the garden spots of the Pacific Northwest. The valley is about thirty-five miles long by eighteen wide, and contains some 300,000 acres of agricultural land.

The Grande Ronde River flows through the valley from the southwest to northeast. Numerous small springs start from the overflowing springs in the surrounding mountains, and flow into the Grande Ronde River. The short and bracing, though sharp, winters; the early springs with free rains, and dry summers extending well into autumn, make an exceptionally healthful climate. The snowfall, heavy in the mountains, is very light in the valley, and does not remain long. Irrigation is not needed for the successful growing of crops. The gentle winds and the sunshine of the spring months gradually melt the snow in the mountains, which, filling the streams throughout the valley with water, forms a perfect system of sub-irrigation.

The soil is very productive. For many years past the wheat crop has been very large, from thirty to fifty bushels per acre being the ordinary yield, and sixty bushels the maximum. Barley averages forty bushels, while yields of seventy-five bushels per acre have been obtained. Oats average from forty to sixty bushels per acre. Excellent rye is grown for feed. Timothy and red clover are profitably grown; from two and a half to four tons of timothy having been cut on an acre. Fruits of almost every kind, and of unsurpassed flavor, grow in abundance. Vegetables are also profitably raised. Hundreds of acres are devoted to sugar-beets for the La Grande beet-sugar factory. Sugar-beets yield from six to fourteen tons per acre, bringing $4.50 a ton at the factory.

The valley is also peculiarly adapted to stockraising. The valley lands proper being very productive of timothy, red-top and clover, thousands of tons are raised and fed through the winter to great numbers of horses, cattle and sheep. The hills and mountains surrounding the valley are covered

TROUT FISHING IN OREGON.

with bunch grass, and furnish an extensive pasturage during the spring, summer and autumn of each year. Water is plentiful, springs and mountain streams being distributed in abundance over the ranges.

Union.—The county seat of Union County, Cove and Hot Lake, are also in the Grande Ronde Valley. Hot Lake has attained a wide reputation as a health resort and the new sanitarium is attracting much attention. A huge geyser with a flow of 2,500,000 gallons per day pours out of the side of the mountain. Island City, Alicel, Imbler, and Enterprise are on the branch line from La Grande.

In the northeast corner of the state is Wallowa County. It is about one hundred miles square and has a population of about 7,000. The hill country is undulating and produces abundant crops of wheat, oats, rye, and barley, and the famous bunch grass on which vast herds of stock are raised. The valleys are well irrigated, and in adition to the crops raised on the higher land, grow immense crops of clover, timothy and alfalfa. The county as a whole is well watered, having four rivers, numerous lakes, streams, springs and the heaviest annual rainfall of any county in the state east of the Cascades. The principal river is the Wallowa, a rapid mountain stream flowing from Silver Lake, a most picturesque sheet of water for forty miles to the Grande Ronde River. Hence the county is particularly well adapted to fruit raising and gardening. But stock raising is the most profitable industry. Its resources in timber, consisting of pine, fir and tamarack, are practically unlimited. It also lies directly in the great mineral belt, and the mines of copper on Imnaha, the coal fields of northern Wallowa, and the marble and gold mines of the mountains are being developed. There are five towns in the valley, Wallowa being the principal one. Enterprise and Joseph are also wide-awake towns.

Meacham.—A short ride from La Grande brings the traveler to Meacham, where is located the famous eating house

GOVERNMENT INDIAN SCHOOL.
(Lee Moorhouse, Am. Photo., Pendleton, Ore.)

of the Oregon Railroad & Navigation Company's lines, Grandma Munra has attained an almost national reputation for the meals she serves. Thousands have eaten at the unique log cabin in the heart of the Blue Mountains, and each has carried away pleasant memories of the good things to eat, and of the sweet-faced, gray-haired old lady.

Bingham Springs.—The springs, situated at an altitude of 2,200 feet and surrounded by peaks from 3,500 to 7,000 feet high, are reached after a picturesque drive of six miles. They burst at varying heights and intervals from the face of the almost perpendicular precipice of rocks, at the base of which runs the Umatilla River. The aggregate flow is about 120,000 gallons every twenty-four hours. The waters have a uniform temperature of 100° Fahrenheit, but vary greatly in composition. They have been found very beneficial in many forms of nervous disorders. The hotel accommodations are good.

Pendleton to Spokane.

Pendleton.—The county seat of Umatilla County. This is in the heart of the famous wheat belt of Oregon where several harvests are often gathered from one sowing, and where eighty bushels to the acre have been produced. Pendleton has a population of about 5,000. It has paved streets, a splendid electric light system, water works that cost $75,000; two flouring mills with a daily capacity of 1,100 barrels, and wool-scouring mills with a capacity of 50,000 pounds daily. The town usually handles about 6,000,000 pounds of wool annually, and one of its mills manufactures the famous Indian blankets. It has churches of all denominations, fine schools, two daily papers, and two banks. The productive qualities of Umatilla County are unsurpassed in the state.

The Palous district, which is tributary to the Oregon Railroad & Navigation Company, comprises one of the largest areas of fertile land on the North American continent. Practically all the country is tillable. Wheat, rye, barley, oats, corn, fruits and vegetables are grown in large quantities all over eastern Washington and northern Idaho. From forty to sixty bushels of wheat per acre, fifty to 100 bushels of oats, and from fifty-five to ninety-five bushels of barley are common yields. From twenty to fifty bushels of corn are also raised. Stockraising is carried on extensively. The crop for years has been wheat, and the principal crop at the present time is wheat. Wheat has made Walla Walla famous wherever the cereal is bought and sold. But while the export of wheat is enormous, the additional acreage of wheat does not compare with that put into fruit and other

cereals, to say nothing of the development of stockraising and the growing of cultivated grasses.

At Pendleton connections are made for Walla Walla and Spokane, as well as points in northern Idaho, by way of the Oregon Railroad & Navigation Company's lines.

Walla Walla.—The county seat of Walla Walla County, one of the garden spots of the Pacific Northwest. The valley of this name often produces 3,000,000 bushels of wheat annually, and large quantities of fruit. The town is 218

SEAL ROCK, OREGON COAST.

miles east of Portland, and 204 miles southeast of Spokane. It has a population of over 10,000, thirteen churches, four public schools, six collegiate institutions, three hotels, two daily newspapers, three banks, a United States cavalry post, and the Washington State Penitentiary.

There are many prosperous towns between Walla Walla and Spokane surrounded by the finest of agricultural lands. Among these may be mentioned:

Colfax.—The county seat of Whitman County. Whitman County has produced $4,500,000 worth of wheat in a single year, or $180 for every man, woman and child in its

HORSE TAIL FALLS, COLUMBIA RIVER.

borders, and hundreds of thousands more besides, in other grains, fruits, vegetables, live stock, wool, and dairy stuff. Colfax has a population of 3,500, three public schools, one private school, a Baptist college, eight churches, a Catholic hospital, two hotels, two newspapers, three banks, and many other business concerns.

Garfield.—Population, 700. It has four churches, a good school, two hotels, a bank, and a weekly newspaper. It is

A MODEL PRUNE DRYER.

a point of supply for the Coeur d'Alene mines that lie east of it.

From Tekoa a branch of the Oregon Railroad & Navigation Company extends into northern Idaho, tapping a rich district. From Colfax another branch extends into Idaho as far as Moscow. The Company also operates a line of steamers from Riparia to Lewiston, reaching the very rich Nez Perces country.

Spokane.—The northern terminus of the Oregon Railroad & Navigation Company is the metropolis or chief city of

BLUFFS OF THE UPPER COLUMBIA.

the "Inland Empire." It has a population of about 50,000 Nine railroads enter the city, four trans-continental, and five local lines. The city owns its system of water works, which cost $1,000,000. It has seventy-five miles of graded streets, forty miles of electric railway, excellent electric light, gas and sewerage systems, three daily and a number of weekly newspapers, besides several monthlies; five banks with an aggregate capital of $1,500,000 and deposits amounting to over $6,000,000. Spokane has sixty-one churches, eighteen schools, three business colleges, and a number of private and denominational institutions; while but a short distance away are the state Normal School at Cheney, and the state Agricultural College and Experimental station at Pullman. The city has four flour mills with a capacity of 3,500 barrels daily, and in one season shipped 547,000 barrels of flour to the Orient. It has over 200 manufacturing establishments, six large modern hotels, and many less pretentious ones. The streets of the city are wide, well-lighted, and generally well paved. The falls of the Spokane River, in the heart of the city, have 374,000 possible horse-power, or more than four times as much as St. Anthony's Falls at Minneapolis. Fort Wright, in the edge of the city, is one of the most attractively situated army posts in the United States.

PENDLETON TO PORTLAND.

Umatilla.—Junction point of the Spokane and Huntington lines of the Oregon Railroad & Navigation Company. Here the first glimpse of the majestic Columbia River is obtained. The Spokane branch from Umatilla follows the river to Wallula and branching off slightly to the northeast, follows the Snake River to Riparia. A branch extends from Wallula to Walla Walla.

Heppner.—At Heppner Junction a branch extends to Heppner, the county seat of Morrow County. The town has a population of over 1,200, and is rapidly growing. It has five churches, a good public school, two live newspapers, a splendid water and electric light system, a national bank, two hotels, a flour mill, and many enterprising business houses. The surrounding country, though as yet thinly settled, is rich in agricultural resources. Heppner usually handles over 5,000,000 pounds of wool annually, and is the trading point for large sections of Morrow, Grant, Crook, Wheeler, Gilliam, and Malheur counties.

Biggs.—The junction of the Columbia Southern Railway and an important grain shipping point. Sherman County, in which it is situated, produces about 3,500,000 bushels of wheat annually.

Shaniko.—The southern terminus of the Columbia Southern. In 1899 it was not on the map. Today it is one of the most prosperous towns of Oregon, and handles about 1,500,000 pounds of wool annually.

The beauties of the Columbia River increase as the train speeds along. We are nearing The Dalles, under which are Celilo Falls. During the flood season the falls are oblit-

erated, and skillful boatmen pass over them in safety. Those huge rocks obstructing the channel are The Dalles of the Columbia. The water of the great river is crowded into the narrow passage for a distance of a mile and a half, not being over sixty yards wide at the narrowest place. A short distance below The Dalles the river again spreads out and majestically sweeps on to the Pacific, being navigable to this point.

The Dalles.—The county seat of Wasco County, which has an area of 2,962 square miles, or 1,895,680 acres. The town is eighty-six miles east of Portland, and has a population of nearly 4,000. It has seven churches, three public schools, and St. Mary's Catholic Academy; two newspapers, two banks, five hotels, two flour mills with a capacity of 400 barrels a day, and an extensive wool-scouring mill, which won the highest prize and a gold medal at the Pan-American Exposition. It is one of the largest wool shipping points in the United States, handling over 8,000,000 pounds during 1901. It exported also 800,000 bushels of wheat, and many thousands of bushels of other grains, besides much fruit. The surrounding country is remarkable in its adaptation to fruit growing and stockraising. A carload of prunes shipped from The Dalles to Milwaukee, Wis., netted $1,620, and Wasco County melons, peaches, grapes and apples are among the finest. The Dalles is the shipping and supply point for a large section of country lying south and southeast, and is steadily growing.

The Columbia River trip is one long to be remembered, and should never be missed by the tourist. Mount Hood, the pride of Oregon, looms up in the west, to the north of which stands Mount Adams, crowned with snow. The picturesque little island further on is Memaloose, the Indian City of the Dead. It is fairly covered with bones of the red men. Here, too, Vic Trevitt, a white man, is buried. He was beloved by the Indians, and they zealously guard his resting place. The beautiful granite shaft which marks his

grave serves at night as a guide to the boats plying the river.

Hood River.—There are many places in Oregon and eastern Washington where fruit raising is carried on extensively, but Hood River, Ore., sixty-six miles east of Port-

INTERIOR STRAWBERRY PACKING HOUSE, HOOD RIVER.

land, on the Columbia River, surpasses them all. It is also fast becoming a summer resort. The climate is ideal the year round, extremes of heat and cold being unknown. The scenery of the surrounding country is beautiful. In the foreground flows the majestic Columbia River; across the river, in Washington, towering above the other nearby peaks, is Mount Adams, 12,225 feet high, perpetually cov-

ered with snow; in the opposite direction, twenty-seven miles from the town, Mount Hood, and on the east and west are the foothills of the Cascades.

Only a vague idea of Hood River and its surroundings can be obtained from the railroad. To see the famous fruit growing region one must leave the train, pass through the prosperous town and climb the hills beyond. The panorama of river and valley, mountain, field, and forest, clothed with hundreds of well kept fruit farms, is beautiful to behold. For twenty miles the fertile tract stretches to the south, with an average width of five miles, making an area of one hundred square miles, or 64,000 acres, of which 50,000 are tillable. Hood River winds through the valley, furnishing water for irrigation, until it empties into the Columbia just above the town.

The ranches or farms vary in size from five to twenty acres. An acre of strawberries commonly yields 150 crates per year, which, at an average income of $2 per crate, gives the owner $300 per acre. The cost of picking and packing is sixty-five cents a crate, or $97.50 an acre, leaving $202.50 for the land and cost of cultivation. Mulching is not necessary as the ground does not freeze hard enough to injure the plants, and the land can be kept in berries from four to seven consecutive years.

Apples are shipped to England, Europe and the Orient, and command a very high price. Among the varieties raised are the Yellow Pippin, Spitzenberg, Jonathan, Northern Spy, Wagener, Baldwin, Gravenstein, Belleflower, Swar, Greening, Winesap, Wolf River and Ben Davis. The Flora or Winter-Banana—a new variety—is attracting attention. It is yellow, of medium size, and keeps well. When one of these apples was shown to the manager of the Waldorf-Astoria, New York, he offered $4 a box for all that could be obtained. The carrying and keeping qualities of Hood River apples are unsurpassable. Apple trees begin bearing at five

OREGON HOPS.

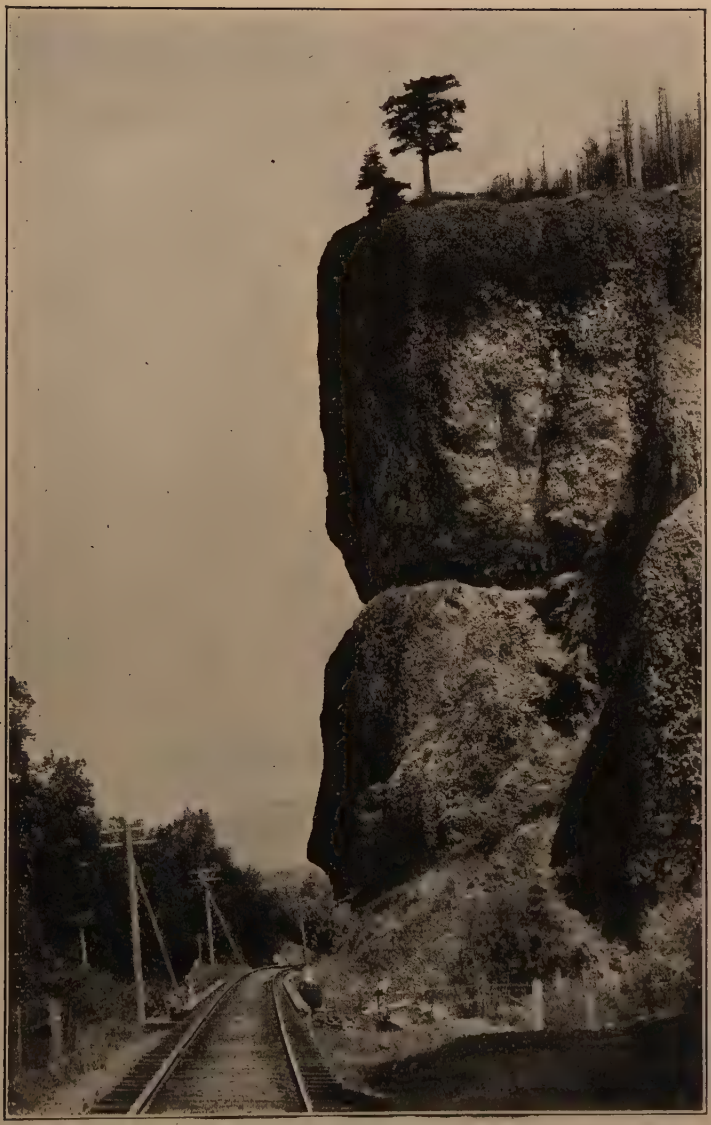
years of age, and a tree ten years old often bears ten bushels of marketable fruit.

Many other kinds of fruits are grown in the valley. Blackberries and raspberries have been grown at a profit of $300 to $500 an acre. Bartlett pears of the finest quality and all kinds of plums and prunes do well. Cherries have netted as high as $1,000 per acre. Peaches thrive in some

MOUNT HOOD.

parts of the valley. Vegetables are profitably grown. Thirty tons of tomatoes have been gathered from an acre.

Mount Hood.—Nowhere in the entire world are there more beautiful mountain peaks than in the Pacific Northwest, and the grandest of them all is Mount Hood. Its snow-crowned summit rises 11,225 feet above the level of the sea. A trip to Mount Hood is one long to be remembered in a lifetime of travel. A spin of twenty-seven miles over a superb mountain road lands the tourist at the picturesque and comfortable Cloud Cap Inn, a huge cabin

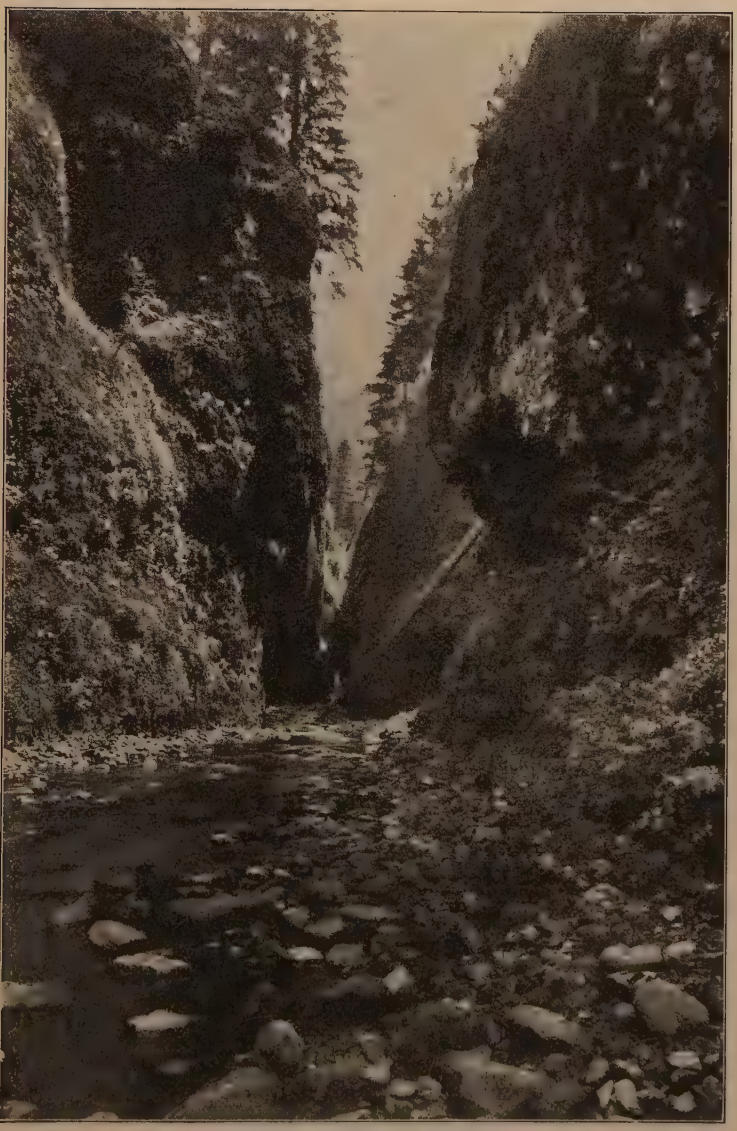


ONEONTA BLUFFS, COLUMBIA RIVER.

of fir logs, surrounded by other cabins and cottages, comfortably furnished and well supplied with everything that is appetizing. The Inn is a most inviting place. Fires of big pine logs blaze in the fireplace. The Inn stands on the northeastern slope of the mountain, at an elevation of 6,900 feet, and the view from this point is grand beyond description. Four miles beyond Cloud Cap Inn is the summit, and those who have made the trip from this point declare that it is many times worth the effort. A three min-

MOUNT ST. HELENS, FROM PORTLAND.

utes' walk from the Inn brings you to Eliot Glacier, a mile long by a third of a mile wide, and 300 feet above the ground. This is the source of Hood River. Coe Glacier lies on the north, Ladd Glacier on the northwest, Sandy Glacier on the southwest, Zigzag Glacier west of south, White River Glacier east of south, Newton Clark Glacier southeast, and one vast ice field southwest of the Ladd Glacier. From the Inn to the top of Cooper's Spur is three miles, over bare ground, and from there for a mile the way lies over ice and snow easily traversed. About 900 feet



ONEONTA GORGE, COLUMBIA RIVER.

from the summit the rope line begins, and for the last 200 feet alpenstock, muscle, and nerve are one's only reliance. Once on the summit the view cannot be surpassed. Sixty miles north is snow-capped Mount Adams, 12,225 feet high. Just west, to the left of it, is Rainier, 14,440 feet; on Puget Sound, 150 miles away, and west of Rainier, is Mount St. Helens, 9,750 feet. Many other snow-capped peaks of the Cascade and Coast Range are also visible.

From The Dalles to Portland is a distance of eighty-eight miles, through scenery marvelously wild and picturesque. The points of interest were recently described by a writer in an eastern magazine as follows:

"Taken altogether, it is doubtful whether there is on earth a stretch of scenery, for the same distance, that surpasses—if there is anything that equals—the eighty-eight miles along the Columbia River between Portland and The Dalles. It combines all that is wild, sublime, picturesque, and beautiful in mountain and stream. gemlike island, boundless forest, crag, cataract and cascade. On one side the greatest river, with perhaps a single exception, of Western North or South America; and, on the other, the giant peaks of the Cascade Range, which numbers among its mighty jewels snow-robed and glacier-crowned Mount Hood, Mount Adams and Mount St. Helens. Precipices towering above the clouds on one hand, and huge falls or rapids of blue-green water roaring and foaming on the other. Multnomah Falls, 850 feet high, have been painted and penciled and sung throughout the world, but no poet's pen or artist's brush has ever been able to portray an infinitesimal atom of their loveliness. And, gorgeously beautiful as they are, Multnomah Falls are but one of nearly twenty cataracts that tumble, flashing and resplendently iridescent, from the mountain tops, in this eighty-eight miles of fairyland. Latourelle and Bridal Veil Falls, though harnessed to run sawmills and lumber chutes, are scarcely less lovely than Multnomah. Wild, weird, Oneonta Gorge, near Multnomah, looks as Kentucky's fa-

mous Mammoth Cave might, if all its vast, cavernous halls and chambers were rent open by an earthquake, and tapestried with mosses, ferns and flowers. Rooster Rock, Cape Horn, the Pillars of Hercules, Gibraltar and Castle Rock, all near Multnomah, are huge testimonials to the Titanic struggle that took place when the mighty flood of the Columbia burst through the glacier-crested Cascades. Speaking of this wonderland, Cardinal Satolli says: 'As

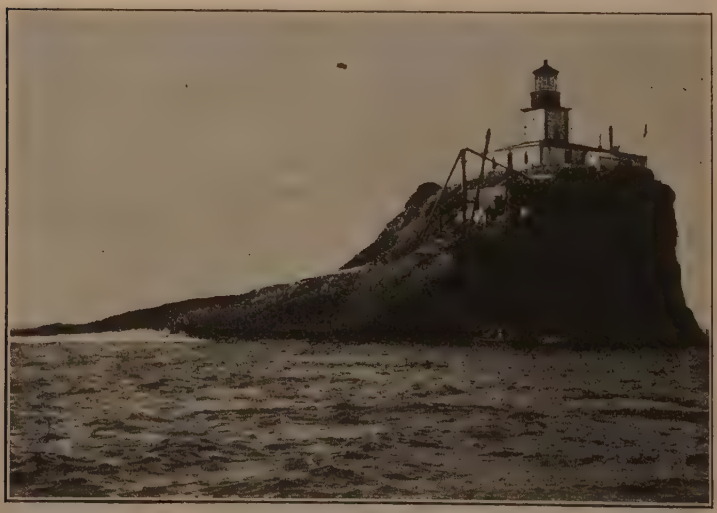
MONGOLIAN CHILDREN, PORTLAND, ORE.

we passed through the Rockies, we thought the scenery could not be surpassed, but when we descended into the Valley of the Columbia and the Cascade Mountains, we found scenery grander than any we had yet beheld.'"

Portland.—This city is beautifully situated near the junction of the Willamette and Columbia rivers, 110 miles from the Pacific Ocean. In 1890 it had a population of 46,385. In 1900, according to the United States census, it had a population of 90,426, an increase of 94.94 per cent in ten

years. In 1902 it had a population of 125,000. Its streets are lighted by electricity, and it has over 100 miles of electric street railway, including a splendid suburban service. Many of its public and private buildings—its chamber of commerce, city hall, hotels, schools, churches, theaters, hospitals, mercantile buildings, and residences—would be creditable to any eastern city of 300,000 inhabitants.

Portland's water supply comes from the glaciers that



LIGHTHOUSE, TILLAMOOK ROCK.

glisten in plain view from its streets and parks. To the purity and plentifulness of its water, and its excellent natural drainage, are due in no small measure the city's remarkable healthfulness. In this respect the census of 1900 places Portland second among the cities of the country, its annual death rate being 9.5.

The manufactures of the state in the last census year amounted to over $46,000,000, of which Portland's share was over $23,000,000, and included many of the staples of trade with Alaska, Mexico, Central and South America, the

ONE OF THE RIGS AT THE ANNUAL ROSE SHOW IN PORTLAND.

Hawaiian and Philippine Islands, Siberia, Japan, China, Australia and South America.

The rapidly developing trade of 500,000,000 people in the Orient is nearer and more accessible to Portland than to any other Pacific Coast city. The natural outlet of the great Columbia River district is down the Columbia River to Portland.

The wholesale and jobbing trade alone amounts to about $125,000,000 annually, and its foreign commerce, imports and exports, to about $15,000,000. Counting flour as wheat, its shipments in a single season amounted to nearly 19,000,000 bushels, which was 34.85 per cent of the entire amount shipped from all Pacific Coast points combined, including San Francisco, Seattle and Tacoma. In January, 1902, Portland shipped more wheat than any port in America, and more than Boston, New York, Philadelphia, Baltimore and Galveston put together; its shipments being within a few bushels of one-fourth of the entire national exports. One Portland milling company has, in a single season, shipped $4,000,000 worth of flour to China and Japan, Europe, Asia, Africa, East Siberia, Hawaii, Mexico, Central and South America.

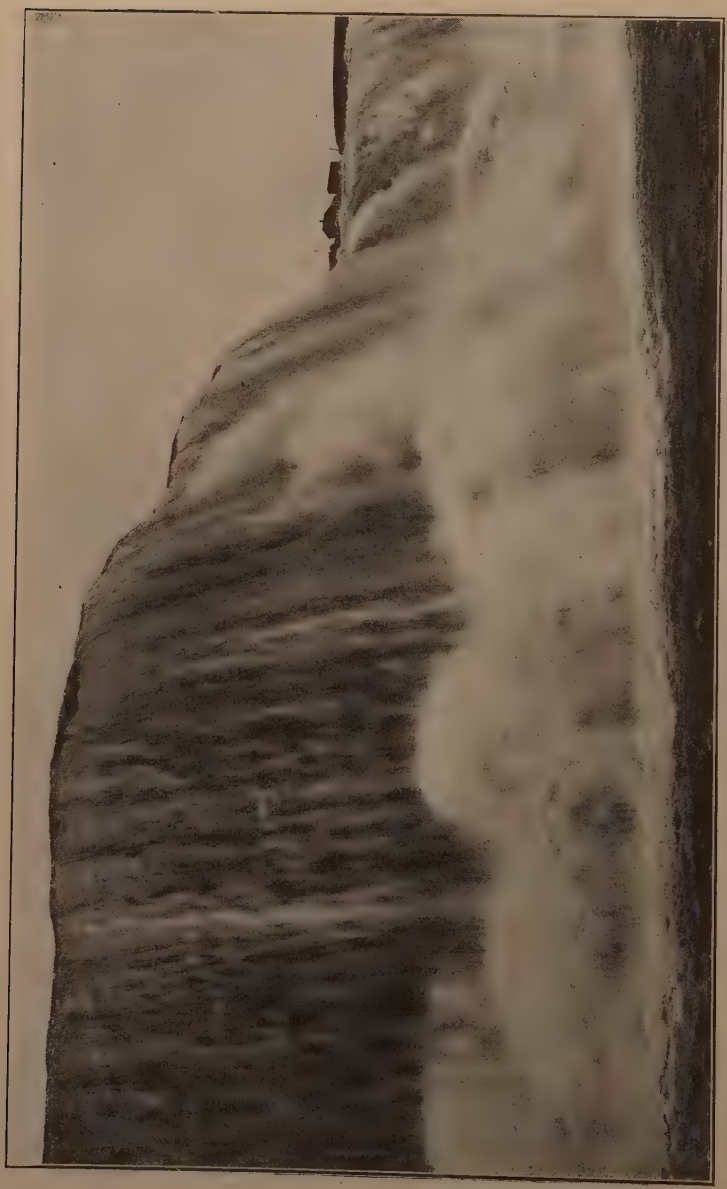
Portland ranks among the wealthiest cities of the country in proportion to its population. Its postoffice receipts for the year ending June 30, 1902, were over $300,000, and its custom house receipts about $600,000. Its real estate sales during 1902 amounted to $8,000,000. Preparations are now in progress for the Lewis and Clark Exposition at Portland in 1905, commemorative of Lewis and Clark's wonderful and heroic expedition across the continent.

Portland is the Pacific Coast terminus of the Union Pacific System, and the northwestern terminus of the Southern Pacific. The Oregon Railroad & Navigation Company has lines of passenger and freight steamers running directly to San Francisco, Honolulu, Yokohama and Hong Kong, and

its river boats reach all important places on the navigable waters of the Columbia and its tributaries.

After a long journey across the continent, an ocean voyage is restful and invigorating, and no more stanchly built and thoroughly equipped steamships than those of the Oregon Railroad & Navigation Company sail the Pacific. It is 765 miles from Portland to San Francisco, and the actual running time of these palatial boats from Portland is about fifty hours. About 115 miles below Portland the vessel sweeps out of the Columbia into the Pacific. The trip affords a magnificent panoramic view of the lower Columbia, the famous fishing grounds, the forts, the beaches, the lonely mid-ocean light-house of Tillamook, the Coast Range and Mount Shasta, and the world-famed Golden Gate.

Those who do not care to take the trip from Portland to San Francisco are given choice of several fine boats to Astoria, Ilwaco, and other points. Modern cottages and first-class hotels are found at North Beach. The surf bathing is unsurpassable. For twenty-seven miles the beach is as straight as an arrow, and so firm and solid that a carriage leaves scarcely a trace upon the sand. Along the entire length of the peninsula, about half way between the ocean and the bay, extends a chain of freshwater lakes, clear as crystal, teeming with fish, and alive with ducks and other waterfowl. Shoalwater Bay oysters are famous all over the north coast, and the bay fairly swarms with fine fish, crabs, and clams. The climate of the beach is perfect. There are no venomous snakes or insects, and the mosquito plague is virtually unknown.



RAINBOW FALLS, GREAT FALLS, MONT.

The Great Northwest.

PART II.

INTRODUCTION.

The Pacific Northwest, or the Northwest of to-day, embraces that portion of the United States, British Columbia and Alaska lying west of the barrier of the Rocky Mountains and bordering on the Pacific Ocean north of the 42d parallel of latitude, or the dividing line between California and Oregon, Nevada and Idaho. It therefore includes the western portion of Montana, the states of Idaho, Washington and Oregon, the western part of British Columbia, and, we may say, commercial Alaska.

It will be, however, the purpose of this book to treat the entire state of Montana as an integral part, with short matter on those states which were once a part of the Northwest when emigrants from Ohio and Indiana to Illinois looked upon Wisconsin and Minnesota, to say nothing of the Dakotas, as a part of the inaccessible and great unknown.

There is little use in giving figures to show the extent of this vast territory, when the Okanogan plains and upper Columbia River and Snake River basins alone, or, more properly speaking, that portion of the Northwest lying in the United States between the Cascade and Rocky Mountain ranges, equals the area of all the New England States, with New York, Pennsylvania, New Jersey and Maryland added. The term "Inland Empire," as applied to this region, is not a misnomer.

It is said the Great Northwest, of all the inhabitable regions of the globe, is the most productive and the least settled. It is not fitting here to enumerate what, as a whole, it possesses, but leave that to be treated with the different sections, for it would perhaps be more appropriate to inquire what it does not possess in abundance necessary to the founding of a nation of the first class, commercially and otherwise.

EARLY HISTORY.

The country between the Mississippi River and the Rocky Mountains, and the country known as the Oregon Territory, lying between the Rocky Mountains and the sea, designated as a "wild and magnificent region, unvisited before by white men, with its barbarous tribes, their character and habits, and abounding in herds of buffalo, deer and antelope, outnumbering the human tenants of the land," has an interesting marine as well as land history. The western shores of North America were visited at an early day by Spanish navigators soon after the discovery of the new continent had become an established fact. Magellan passed through the straits which bear his name; Balboa crossed the Isthmus of Darien in 1513; Pizarro conquered Peru and other parts of South American territory, while Cortez took possession of Mexico. From the latter country many expeditions, with varying success, were fitted out and sent to north Pacific waters for the combined purpose of tracing the coast line, finding a way to India, discovering a navigable passage between the Atlantic and Pacific oceans, and last, but not least, of repeating the rapacious plunderings of Pizarro and Cortez.

Ulloa, in 1539, followed the coast of Lower California to the 30° of latitude; in 1542 Cabrillo and Ferelo, after discovering San Diego Bay, advanced as far north as the 44° on the Oregon coast. In 1579 Sir Francis Drake landed on the shores of California at what is now supposed to be San Francisco Bay, but it is still a disputed question whether he ever went farther north. In 1592 Juan de Fuca, while in the employ of the Spanish Viceroy of Mexico, entered the strait now bearing his name, which leads to the Gulf of Georgia and Puget Sound. In 1602 Sebastien Viscaino, after attempting to establish colonies in California, sailed as far north as Cape Blanco. In 1616 two Dutch navigators sailed around Cape Horn, and early in the following century the Spanish Jesuits located missions in California. Not until 1774 was any exploration of the coast of the Northwest

PIONEER DAYS IN THE GREAT NORTHWEST.

made, when another Mexican expedition, under Juan Perez, sailed north as far as the 54°, near the mouth of the Skeena River, and not far below the present boundary of Alaska. Again, in 1775, a Mexican expedition under Heceta and Quadra proceeded as far north as the Strait of Juan de Fuca, named Cape San Roque and charted an opening, which afterward proved to be the mouth of the Columbia River. Again sailing north a part of the expedition reached the 58°, a point north of the present site of Sitka.

It is supposed that the Chinese and the Japanese, in their junks, had discovered the north Pacific coast of America long before white men saw it, and there is little doubt that the Indians who inhabit this coast are Mongoloids, having emigrated across Bering Strait from Asia. There is much evidence in the way of old junk, old coins, racial likeness, etc., to warrant the belief that communication had been established.

In 1778 Capt. James Cook, an English navigator, made various landings from the Oregon coast northward, finally passing through Bering Strait, where he traced the Arctic coast both east and west along the American and Asiatic shores. He named Cape Foulweather, also Cape Flattery, at the southern point of the Strait of Juan de Fuca. He discovered and named Prince William Sound and Cook's Inlet and visited Unalaska, along the Alaskan coast. His vessels spent two years in north Pacific waters, prosecuting the fur trade, finally disposing of their cargoes at Canton. The publishing of the journals of this expedition in England was the first spur to international trading in furs. In consequence many companies were formed, eventually causing great rivalry.

James Hanna came to Nootka, on Vancouver Island, from England in 1785, and again in 1786, and established trade with the natives. Then came Portlock and Dixon and traders from Bombay, Calcutta, and other foreign ports, when a general knowledge of the country was obtained.

The French, in 1790, sent out the Peyronne, which touched the coast at many places between Monterey, Cal., and the Alaska coast off Mount St. Elias. The Spanish government was again stimulated to action, and thus the one great incentive, the barter of junk, knives and gewgaws for furs, was fairly launched.

The first voyages from the United States were those of the ship Columbia and sloop Washington, Robert Gray and John

Kendrick, commanders. They reached Nootka Sound, on Vancouver Island, via Cape Horn, in 1788, and returned via Cape Good Hope in 1790. The attempts of Capt. John Meares, a Portuguese, to discover the opening of the Columbia, as laid down by the Mexican, Heceta, resulted in failure on account of stormy weather, and he then renamed Cape San Roque Cape Disappointment, and the mouth of the now famous river Deception Bay, so it was left finally to Captain Gray, of Boston, in the Columbia, the flagship of a squadron of seven vessels, to complete the discovery in 1791 and give the river its name. During the same year

RELICS OF FORMER DAYS.

Capt. Vancouver, an Englishman, took over Nootka Sound, on the island bearing his name, to the British government, and made important explorations in the Strait of Juan de Fuca and the Puget Sound region. He named the large island on which Victoria is situated for himself, Mount Baker and Puget Sound for his lieutenants, and Mount Rainier for his friend, a British admiral; he also named many ports and islands, and, not to forget his sovereign, the body of water which receives the Fraser River—the Gulf of Georgia.

The Russians, through Vitus Bering, a Dane, in 1778 discovered the strait of that name and touched the shores of America, having built a vessel at the mouth of the Kam-

chatka River, the rigging, cables, etc., having been dragged 2,000 miles on sleds overland. Later they extended their trade to the Aleutian Islands, and in 1803 established a depot and seat of government at Sitka. Although the Russians made one or two voyages further south, their share in the work of discovery was confined almost wholly to Alaska.

In 1766 the adventurous spirit of John Carver, of Connecticut, incited him to visit the Northwest, which he did, going by way of Albany, N. Y., and the lakes, and then overland as far west as the Mississippi River. He first learned from the Indian tribes that the four great rivers of the continent were "the St. Lawrence, the Mississippi, the River Bourbon (Red River of the North), and the Oregon, or the River of the West (the Columbia)." His plan was to follow the same route afterwards traveled by Lewis and Clark, namely, the Missouri River to the Rocky Mountains, thence crossing over to the Columbia waters and passing down to the Pacific Ocean.

The trade in furs caused the organization of several fur companies in Great Britain and America from time to time, among them being the Hudson's Bay Company, of which Sir Alexander McKenzie was a member. In 1789 McKenzie made his way by Slave Lake and the McKenzie River to the Arctic Ocean, and in 1792 he ascended the rapid Peace River to the Rocky Mountains, crossed over to the Fraser River, and could easily have reached the Pacific Ocean, but was dissuaded from doing so by the Indians, who told him that this river held its course a long way to the south. This caused him to believe that it was the Oregon (Columbia). He then ascended the Fraser River, turned west to the Salmon River, and reached the Pacific Ocean in British Columbia, near the 52° of latitude. McKenzie advised his government of his belief in this matter, and as this was the first trip overland to the Pacific, it became the initial factor in the long and bitter territorial dispute, resulting in the treaty of 1845, finally making the 49th parallel the boundary line, as it, as near as possible, splits the waters of these two great rivers.

Lewis and Clark Expedition.—In 1803 President Jefferson sent a confidential message to Congress, proposing that a party be despatched to the Northwest to trace the Missouri River to its source, cross the Rocky Mountains, and proceed to the Pacific Ocean. This was approved and $2,500 was appropriated. Capt. Merriweather Lewis was,

upon his own application, made leader of the expedition, and Capt. James Clark was afterwards associated with him. During this year was completed the Louisiana purchase, which gave to the United States all the territory in the Northwest east of the main divide of the Rocky Mountains.

JEFFERSON.

This now famous expedition left St. Louis in May, 1804, and proceeded up the Missouri River by boats, making easy stages, stopping to confer with the Indians and make notes of the adjacent country. November found the party 1,600 miles up the river and by the 20th of that month they had built huts in the timber on the river bank, which they called Fort Mandan. Their location was not far from the present site of Mandan, N. D. The winter was spent in receiving the heads of the different tribes, entertaining them, holding councils, giving and receiving presents, always advising peace between the tribes, which was very difficult to maintain. Game being plentiful, some hunting was done to maintain the food supply, which, with the corn received from the Indians, sufficed to carry them through the winter.

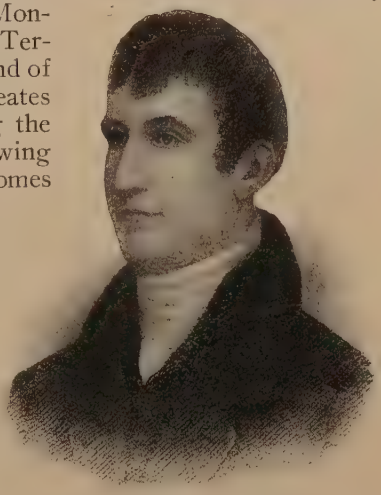
The barge which had previously carried the stores was sent down the river, accompanied by several Indians, while the party, which now consisted of thirty-two persons, on April 7, 1805, forged ahead on the long and unknown journey. Chaboneau, one of the interpreters, was accompanied by his wife, Sac-a-ja-we-a, with her babe. She was a member of the Shoshone band of Snake Indians whose country the expedition expected to pass through, and it was thought she might be of considerable assistance, as she was eventually. She was the only woman of the party and made the entire trip to the Pacific Ocean and return, serving alternately as interpreter and helper. On April 26 camp was made at the junction of the Yellowstone and Missouri rivers, which is now very nearly on the boundary line between the states of North Dakota and Montana. The journal says, according to Indian

information, the Yellowstone "runs first through a mountainous country, but which in many parts is fertile and well timbered; it then waters a rich and delightful land, broken into valleys and meadows, and well supplied with wood and water, till it reaches near the Missouri." Such is the early description of the valley of that clear running stream, heading in the National Park of the same name, born of never-failing snows, tumbling from dizzy heights to the wonderful canyon below, at last emerging from its mountain barriers and affording a transcontinental railroad pathway with sites for numerous prosperous cities.

NAPOLEON.

Speaking of the country along the Missouri River, the journal says, "then a beautiful low plain commences and, widening as the rivers recede extends along west between them." Other plains are spoken of, with high ground and timber, also the advantages of a trading post, which no doubt brought about the establishment of Fort Buford, now a thriving city on the Great Northern. At this point in the journal it is mentioned that "the game was in such plenty that we killed only what was necessary for our subsistence. . . . We are surrounded with deer, elk, buffalo, antelope and their companions, the wolves. . . . Two savage white bears, the terror of the Indians, were killed." Porcupine River, near the present station of Kintyre, was named. The game was so plentiful and extremely gentle that "the male buffalo will scarcely give way to us, and as we approach will merely look at us for a moment as something new and then quietly resume their feeding." And to think that less than a century leaves but a few of these noble animals, in pens and exhibition places, to be looked upon as a relic of the past—a shameless destruction of one of the wisest provisions of nature!

On May 5 the expedition reached the mouth of Milk River (now a railway station of the same name) along the valley of which the railroad continues its way towards the west. The journal gives a good idea of the river, which rises in the Rocky Mountains in Northwestern Montana, runs into the Northwest Territories, later returns to the land of its birth and for 200 miles creates the great stock regions along the international line. Still following the Missouri, which now comes from the southwest, the journal says "the country like that of yesterday is beautiful in the extreme." Again, "the country continues level, rich and beautiful," again the elk and deer become "so gentle that the men are obliged to drive them out of the way with sticks and stones."

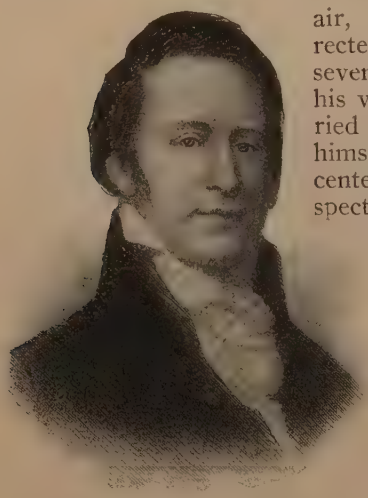


CAPT. MERRIWEATHER LEWIS.

On May 20 they reached the mouth of the Musselshell River. In speaking of the country again the journal says, "a waving valley, extending for a great distance to the northward with a fertile soil which, though without wood, produces a fine turf of low grass." Here the Missouri comes from the west, which course the party mainly took for the next 200 miles, skirting the north side of Fergus County, Mont.

On May 26 Captain Lewis ascended some hills and for the first time obtained a view of the Rocky Mountains, "The object of all our hopes and reward of all our ambition." He probably saw what are now known as the Big Snowy Range and the Belt Mountains, south and east of Lewiston. At the mouth of the Marias, near Fort Benton, so long the head of navigation of the Missouri in early days, some time was consumed in determining the true Missouri. With much doubt, after cacheing a boat and a part of the stores, they proceeded. In referring to the Falls of the Missouri, now the site of a city, with a great smelter and other manufactories, known as Great Falls, Captain Lewis says that on

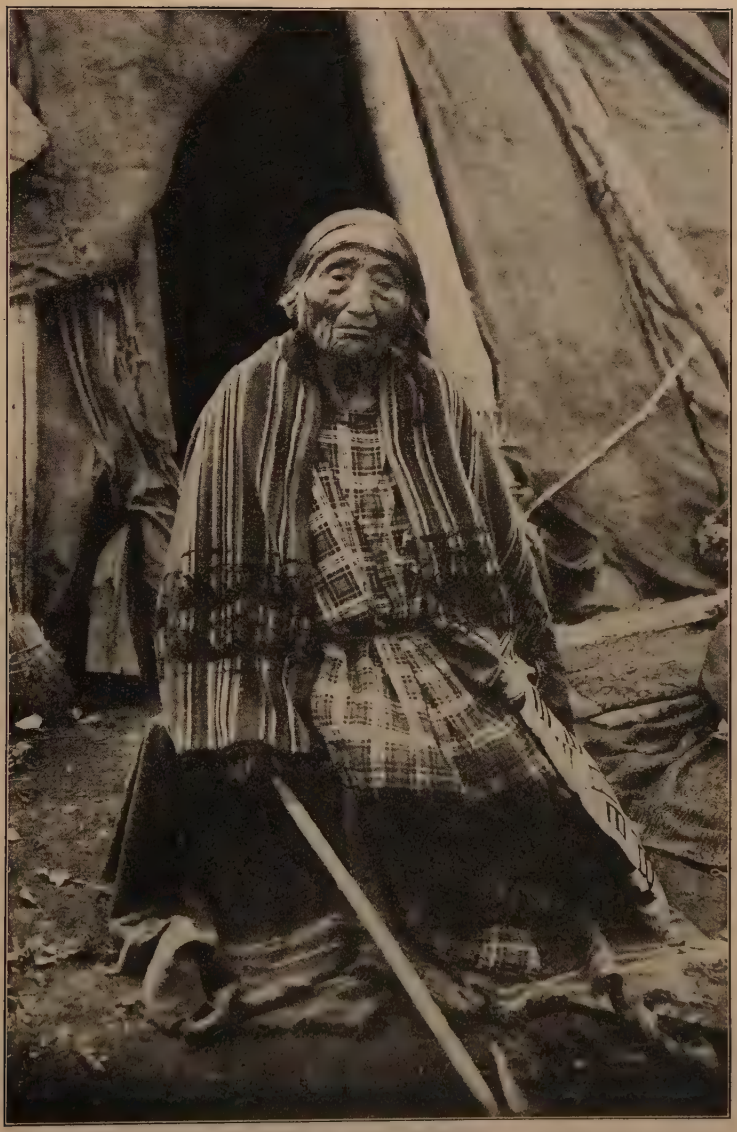
the 13th they came to a beautiful plain where the buffalo were in greater numbers than they had ever seen before, and finding that the river bore considerably to the south and fearful of passing the falls, being on foot, he changed his course to the south. Spray in the air, and the increasing noise directed him, and after traveling seven miles the scene burst upon his vision. Down the hills he hurried with impatience and seating himself on some rocks under the center of the falls, enjoyed the spectacle "which since the Creation had been lavishing its magnificence upon the desert unknown to civilization." Until July 15, a period of thirty-two days, they occupied themselves in exploring, cacheing stores for future needs, portaging the falls, and building newer and lighter boats for more rapid travel.



CAPT. JAMES CLARK.

From here on the river was tortuous, the canyon walls so abrupt at times as to afford no trail on the banks. At the three forks of the river, in what is now Gallatin County, it was decided to take the southeasterly fork, which they named Jefferson River, after President Jefferson, the projector of the enterprise. On this river the Indian woman, Sac-a-ja-we-a, said she had been captured from her people, the Snake Indians, when a child. After much exploring, several accidents and considerable fatigue, the party reached the source of this river, the journal referring to it as "the remotest water of the Missouri," "which had never before been seen by civilized man . . . and as we sat down by the brink of that little rivulet which yielded its distant and modest tribute to the parent ocean, we felt ourselves rewarded for all our labors and all our difficulties."

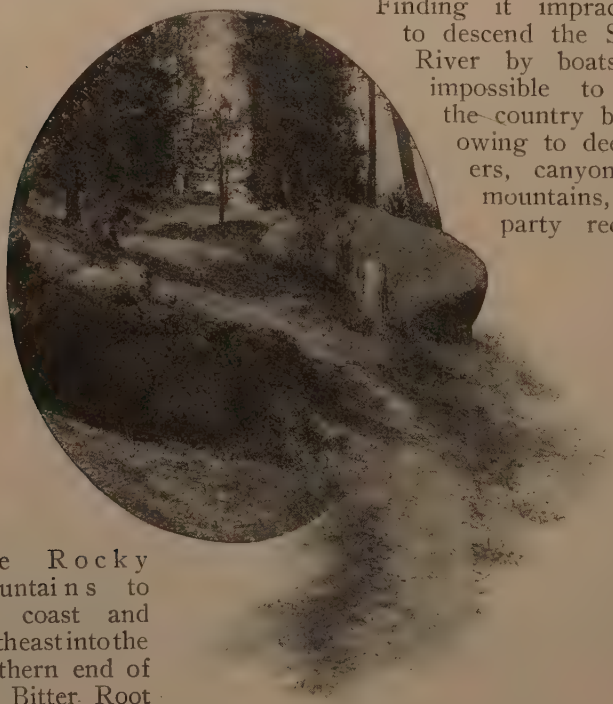
They stood at the top of the great divide of the Rocky Mountains, now in Beaver Head County, Mont., knowing nothing of the great geyser basin of the Yellowstone Park, in



UMATILLA SQUAW, PE-TOW-YA.

She saw Lewis and Clark in 1805. Died in 1902, aged 112 years.
Lee Moorhouse, Am. Photo. Pendleton, Ore.

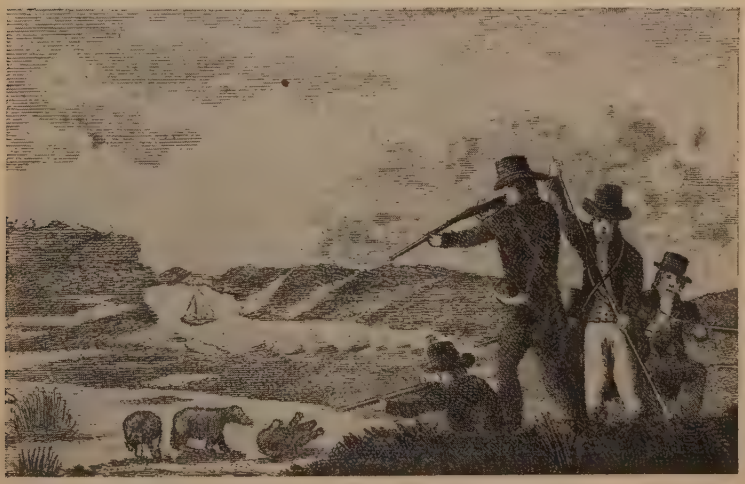
Wyoming, which was feeding the middle fork, named by them Madison River. They "followed a descent much steeper than that on the eastern side, and at the distance of three quarters of a mile reached a handsome, bold creek of cold, clear water, running to the westward, and stopped to taste, for the first time, the waters of the Columbia." They were in what is now Lemhi County, Idaho, and were descending to the Lemhi River, a branch of the Salmon, which is a branch of the Snake, that river being a direct and important member of the Columbia. At a camp of the Shoshone Indians Captain Lewis, who had preceded the main party, was given a piece of roasted salmon, which satisfied him that he was then on Pacific waters. He returned with the Indians and horses to assist in taking the luggage across the divide. Sac-a-je-we-a at once recognized the chief as her brother, and "met him with demonstrations of great joy."



OLD LEWIS AND CLARK TRAIL AT LOLO NATIONAL SPRINGS.

Finding it impracticable to descend the Salmon River by boats, and impossible to cross the country by land owing to deep rivers, canyons and mountains, the party recrossed the Rocky Mountains to the coast and northeast into the southern end of the Bitter Root Valley, passed

down the valley to "Travelers' Rest" at the mouth of Lolo Creek, then up that creek to the summit and over the Bitter Root Mountains again to the head of the Koos-koos-kee, or Clearwater River in Idaho, and thence down to the Snake River, where the Nez Perces Indians gave them the first description of the Falls of the Columbia. The journal reads, September 22: "As we approached the village most of the women fled with their children to the neighboring woods. . . . The plains were now covered with Indians, who had



CAPTAIN CLARK AND HIS MEN SHOOTING BEARS.
From an old print.

come to see the whites and the strange things they had brought with them. . . . Chief Twisted Hair drew a chart of the river on a white elk skin, according to which the Koos-koos-kee (Clearwater) forks was a few miles from this place; two days' journey to the south was another and larger fork. . . . Five days' journey lower down was a large river from the northwest, and from the mouth of this river (the confluence of the Snake and the Columbia), to the falls was a five days' journey." At last the problem, after many difficulties and privations, had been solved by the friendly Nez Perces, or "pierced nose" tribe, in the valley of the Clearwater River. This tribe in later years made a gallant fight against the advancement of the white people whom Lewis

and Clark represented, under the greatest of all Indian generals, Chief Joseph.

The horses procured of the Shoshones were left for use on the return trip, canoes were made from the pine timber in the valley, and on October 7 the journey was resumed by water, passing the present sites of the prosperous towns of Lewiston, in Idaho, and Clarkston, in Washington, where the Clearwater and the Snake rivers join, the latter now being spanned by a modern steel bridge. The trip to tidewater was made, accompanied by hordes of Indians, all curious to see the white men. Fort Clatsop, near the present site of Astoria, at the mouth of the Columbia River, was built, and the winter spent by the party on rather short rations.

Certificates of kindness, etc. were distributed to the Indian chiefs, and the following notice was posted in the fort and given to the natives:

"The object of this is, that through the medium of some civilized person who may see the same, it may be made known to the world that the party, consisting of the persons whose names are hereunto annexed, and who were sent out by the government of the United States to explore the interior of the continent of North America, did cross the same by way of the Missouri and Columbia rivers, to the discharge of the latter into the Pacific Ocean, where they arrived on the 14th day of November, 1805, and departed the 23rd day of March, 1806, on their return to the United States by the same route by which they came out."

This was a strong factor in our claim made at the settlement of the boundary dispute between England and the United States, later making it possible for this vast northwest country which we are now treating, to be exploited and settled by the American people.

Working their way gradually up the Columbia, giving medical aid and council to the Walla Walla Indians and neighboring tribes, they again procured horses and, passing up the Clearwater, reached the western base of the Bitter Root Mountains. Here the party divided. The journal says: "We now formed the following plan of operations: Captain Lewis, with nine men, was to pursue the most direct route to the Falls of the Missouri, where three of his party were to be left, to prepare carriage for transporting the baggage and canoes across the portage. With the remaining six he was to ascend Maria's (now Marias) River, explore the country and ascertain whether any branch of this river reached

INDIAN WAR DANCE.

as far north as latitude 50°, after which he would descend that river to its mouth. The rest of the party were to accompany Captain Clark to the head of the Jefferson River, which Sergeant Ordway and nine men would descend with canoes and other articles deposited there. Captain Clark's party, which would then be reduced to ten, would proceed to the Yellowstone at its nearest approach to the Three Forks of the Missouri, where Clark would build canoes, descend that river with seven of his party and wait at its mouth till the rest should join him. Sergeant Pryor, with the two others, would take the horses by land and go to the British posts on the Assinniboine with a letter to Mr. Henry to induce him to endeavor to prevail on some of the Sioux chiefs to accompany him to Washington."

Being now near the junction of the upper forks of the middle forks of the Clearwater, in Idaho, the party separated, and Captain Clark and party passed, as the Indians termed it "up the river of the road to the buffaloes." It was a well-beaten trail and used by the western Indians as a thoroughfare between the Columbia plains, where salmon was the main diet, and the Missouri plains, where the buffaloes were innumerable and formed the chief sustenance. Pilgrimages were made to the east by the Indians, but it seems few were made to the west.

The plans were carried out, the Lewis party explored the Blackfeet country, participating in a skirmish with that tribe, one Indian being killed, joined the canoes at the mouth of the Marias River, and passed down the Missouri. Captain Clark proceeded to the Three Forks of the Missouri, thence up the Gallatin and over to the Yellowstone, the route now traversed by the Northern Pacific Railroad, probably reaching that river at Livingston, Park County.

Here boats were built and "through a beautiful landscape, where buffaloes kept up a continued bellowing. . . . where large herds of elk were lying on every point so gentle that they might be approached within twenty paces," they floated down this charming river to its mouth, the only alarm being lest the buffalo "hovering about at night should tread on the boats and split them to pieces." This was in the month of July. What a scene to contemplate! Is it any wonder that Cooper and his contemporaries wrote such fascinating tales of the prairie? Is it any wonder that the youth of the land was fired with a desire for adventure? To-day, instead of

buffalo, elk and big horn sheep, Montana's plains are covered with myriads of domestic cattle and sheep, and the city of Billings, situated on the banks of the Yellowstone, in 1902 became the largest wool market in the United States, while Great Falls and Fort Benton were a close second. The great cattle companies "roundup" and ship to market thousands of head of cattle, fed on the self-same "buffalo grass" that nourished the original occupants.

In boats, made of buffalo hides, the men who had been with the horses floated down the river, and all sections joined at the Missouri. At the Mandan settlement Chaboneau, the

* MANDAN VILLAGE AND "BULL" BOATS.

French Canadian, and his wife Sac-a-ja-we-a and child, left the party, though offered the opportunity of going to the States. The journal says: "The man had been very serviceable to us, and his wife was particularly useful among the Shoshones; indeed she had borne with a patience truly admirable the fatigue of so long a route, encumbered with the charge of an infant." The question of erecting a monument to her memory at the Three Forks of the Missouri, in Montana, has been seriously agitated. Taking a Ricara chief and his family with them, they descended the river as rapidly as the conditions would permit, reaching the Mississippi and St. Louis on September 23, 1806, after two and a half

* From "Travels to the Interior of North America in 1832-3-4." By Max Wied, 1843.

years' absence, in good health, with the loss of but one man, and a single skirmish with the Blackfeet Indians. The length of the route, going out by way of the Missouri to its headwaters, was 3,096 miles, and from the divide to the Columbia and down to the Pacific Ocean, 1,038 miles; on the return 3,545 miles were traveled, via Lolo Pass, making a total trip of 7,679 miles, through an unexplored country. Thus in 1806 President Jefferson's far-seeing eye had accomplished more than an invading army could have done, in practical results, in the great struggle for the fur trade and territory in the Great Northwest, and it is a source of pride that the empire which has developed is, in the spirit of his declaration of purpose, "a commercial empire beyond the Rocky Mountains, peopled by free and independent Americans, linked with us by ties of blood and interest, and enjoying, like us, the rights of self government."

To show the English point of view, a quotation is made from the British Columbia Year Book:

"President Jefferson, with a prescience beyond the public men of his day, saw in the great country west of the Mississippi, the destiny of which was more or less associated with the indefinite limits of the Louisiana Territory, great possibilities, and he took a step which he hoped would further the chances of the Republic. Jefferson took a step which, though creditable to his enterprise, could not be said to reflect credit on his methods."

The last sentence refers to giving out the object of the expedition as one in the interest of science and obtaining passports from the English government.

An ample field was now open for new enterprises, and various fur trading companies were formed. Mr. John Jacob Astor, of New York, had become wealthy in the eastern fur trade, and in 1809 organized the American Fur Company, the Northwestern Company, and the Southwestern Company. The Missouri Fur Company was founded at St. Louis, and established posts on the upper Missouri and west of the Rocky Mountains on the Lewis River. The Indians at the mouth of the Columbia River, Lewis and Clark found, knew only a Mr. Haley as a trader, and the bay at Astoria was called Haley's Bay.

In 1810 Mr. Astor organized the Pacific Fur Company, to deal in furs and to establish posts on the Columbia River and its branches, the head waters of the Missouri, and a strong supply depot and fort was erected at the mouth of the

Columbia. The first ship, the Tonquin, landed the partners (mostly Canadians) and men, April 12, 1811, at the mouth of the Columbia, and they founded Astoria. This ship, while on a trading expedition at Vancouver's Island, was later blown up. The Northwest Fur Company, from Montreal, then attempted to take possession of the country, but found they were too late. The war of 1812 demoralized everything, and the Astor forces gave up the posts on the Okanogan and Spokane and repaired to Astoria. The Astor goods were sold out to the Northwest Company at a sacrifice, a British sloop of war came to anchor in the harbor and took

FORT MANDAN.

possession of the Astor fort and the country, hoisted the British colors and changed the name to Fort George. Peace was declared in 1815, but Astoria was not restored to the United States until 1818. The government failing to sanction Mr. Astor's project, trade declined until after the settlement of the boundary question in 1846; then there was neither post nor trading post under the control of the United States throughout the Columbia region. The Hudson's Bay Company reigned supreme from the ocean to the Rocky Mountains. Nathaniel Wyeth headed two expeditions to the Pacific Coast and established posts in the Oregon territory, but failed to hold the positions against this powerful com-

pany. Astoria stands to-day, however, the oldest American city on the Pacific Coast.

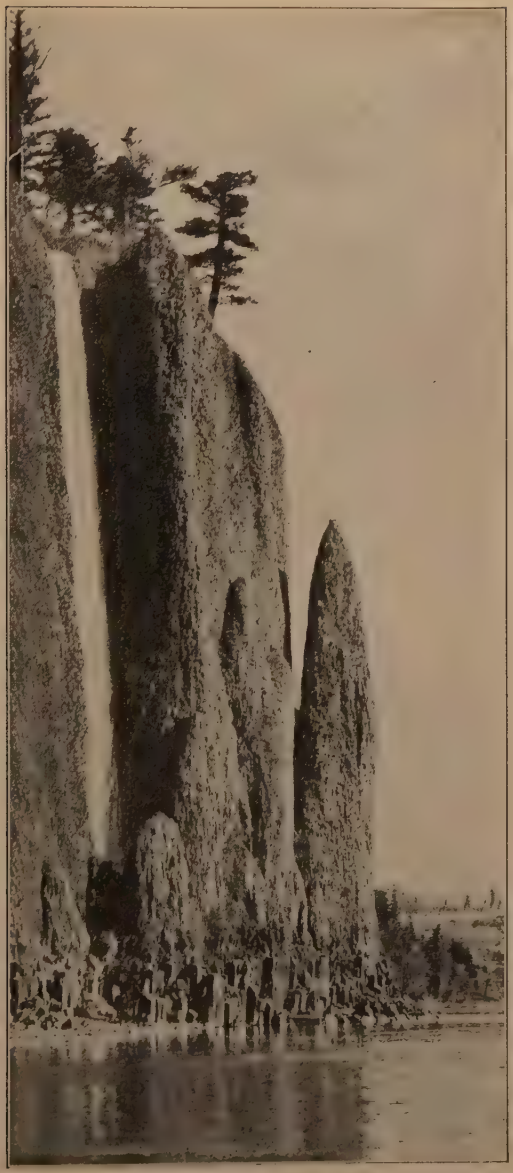
In 1818, to settle the boundary line, it was proposed at the treaty of Ghent, that a line be drawn from the Lake of the Woods to the 49th parallel of latitude, and from the intersection westward to the Pacific. It was, however, agreed upon in this treaty only to the Rocky Mountains. The negotiations were resumed in 1824, the 49th parallel being again proposed by the United States, but the English wanted the line to run down the Columbia River to the Pacific Ocean, which was not accepted. In 1826 it again became a subject of discussion, also again in 1827, when it was agreed that the territory should be jointly occupied. The old slogan of "54° 40′ or fight" kept the fires alive until the matter was settled permanently in 1846. To-day iron posts and a felled strip of timber mark the international boundary from Blaine eastward. The Astor post, the discovery of the Columbia by Captain Gray, the Lewis and Clark expedition, aided by the missionary Whitman at Walla Walla, made the basis of our claim, but the Lewis and Clark expedition was the ruling evidence.

The earliest emigration from the United States for the purpose of settlement in what was known as the Oregon Territory, that which was drained by the Oregon or Columbia River, was made in 1832 in western Oregon.

The history of the Hudson's Bay Company is a very important chapter in the history of the entire Northwest. The diplomatic history between Russia and England, while settling the Alaskan boundary, at that time between England and the United States with reference to the boundary between Canada and the United States, and the founding of the Louisiana territory and its sale to the United States are interesting and important.

There were three factors in the Northwest coast history. First, the Spanish desire for conquest and plunder, which later events showed availed but little; second, the search for the Northwest Passage, or the fabled straits of Anian; third, the fur trading period, inaugurated by the Russians, by sea, and in the interior by the French trappers as early as 1842, all culminating in the settlement of this vast territory and the building of trans-continental railways.

Topography and Climate.—The prominent physical feature of the central part of the United States is the great



CIGAR ROCK, COLUMBIA RIVER.

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basin between the Appalachian Mountains of the Atlantic section and the Rocky Mountains of the Pacific section, of which the Mississippi Valley is the extreme depression, or trough. The region between the Mississippi River and the Rocky Mountains is known to geographers as the Great Plains, being almost an entire prairie country and comparatively level. The rise is very gradual over a direct line of more than a thousand miles to the westward, and there are many places in Minnesota and North and South Dakota where a furrow may be turned for distances of from ten to twenty miles without a break.

A broad upland in North Dakota, which extends into Canada, is known as the Coteau of the Missouri. From this point westward, through Montana to the Rocky Mountains, the plains are comparatively level, interrupted only by occasional non-continuous ranges of mountains, such as the Little Rocky and the Bear's Paw mountains, in the northern part of that state; and the Highwood Belt, Snowy and Crazy mountains, in the central part, lying between the Missouri and Yellowstone rivers. These mountains are covered with timber in contrast to the surrounding prairie country.

The country between Chicago, Ill., and Helena, Mont., should be divided agriculturally into three sections: first, the land of extensive cornfields, this being the country adjacent to the Mississippi River, with a very slight altitude above the level of the sea; next the wheat fields of Minnesota and the Dakotas, at an average elevation of from 1,000 to 1,500 feet, with shorter summer seasons and bracing winters, and lastly, the extensive stock ranges of Montana, with a winter climate, including a colder and dryer atmosphere. These plains are abruptly terminated on the west by the eastern, or Main Divide of the Rocky Mountains, which rises from a base of 4,000 feet elevation to peaks of 10,00 to 14,000 feet in different parts of the range. Other ranges follow farther west, each having a local name, such as the Bitter Root and Coeur d'Alene mountains, which form a very pronounced boundary between the states of Idaho and Montana. Between these ranges and the Main Divide lies a long, fertile, temperate and romantic valley, and many smaller valleys lie between the various spurs of the ranges, affording homes to many people.

The Rocky Mountains are the great western barriers to the central North American weather currents, therefore the climatic effects east of these mountains are based upon en-

AVALANCHE BASIN.

tirely different causes from those on the western side. All eastern Montana lies upon the Missouri Plateau, which is a part of the same plains that are drained by the Saskatchewan River of Canada, so that the currents of air coming down from the north are carried over it and all the region between it and the great lakes, where they are tempered by southern influences. Medicine Hat, in Canada, usually records and notifies us first of the coming cold wave. Then follows Fort Assinniboine, at the foot of Bear's Paw Mountain, which bears the name of being the coldest place in the United States. Extremely cold weather is of short duration, but the general temperature in winter is very much lower than that of the territory lying west of the Rocky Mountains, or even of the valleys between the Bitter Root Mountains and the Main Divide. At times the mercury chills in the thermometer on the high plains, and frequently drops to 20° below zero, but the redeeming feature is that the air is so dry that zero weather in Montana seems like thirty-two degrees above to one accustomed to a humid atmosphere.

The great range of mountains, which, under a multiplicity of names, stretches from Patagonia to Alaska and is really the backbone of the continent, is full of interest in all its ramifications. In Colorado the ranges cover the larger portion of the state; in northwestern Wyoming they spread out again, forming a high basin known as the Yellowstone Park, and there change their trend from nearly north and south to a northwesterly direction. The Park is about sixty miles square—a great basin having an elevation of from 6,000 to 12,000 feet, and is surrounded by lofty, snow-clad peaks. It is a vast volcanic region, replete with natural wonders in the way of numerous geysers, boiling springs, lakes and canyons, which are the very sources of the great water arteries of the country; the Colorado River flows south through its gorge of wondrous depth and color, to the Gulf of California; the Snake River wends its tortuous way to the Columbia between basaltic cliffs, and then in scenic splendor pushes on to the sea; and last, but not least, the Missouri, the longest river of the world, the pathway of Lewis and Clark, with the Father of Waters, flowing amid corn and cotton and populous cities, marks the Louisiana Purchase territory to the Gulf of Mexico. The National Park treats the sight-seer to the mighty falls and canyon of the Yellowstone; the Missouri at Great Falls—a great volume of water harnessed to

industry; and the Snake River, in southern Idaho, a torrent of water falling from a greater height and more romantic than Niagara. Principally at Butte and at Helena, Mont., and along the Coeur d'Alenes, the mountains are giving forth untold mineral wealth. Nestled between their mighty crests are peaceful and fertile valleys, the idyllic spots of earth; the scenic beauty of the Kootenai and Pend d'Oreille, the upper sources of the Columbia; the wild

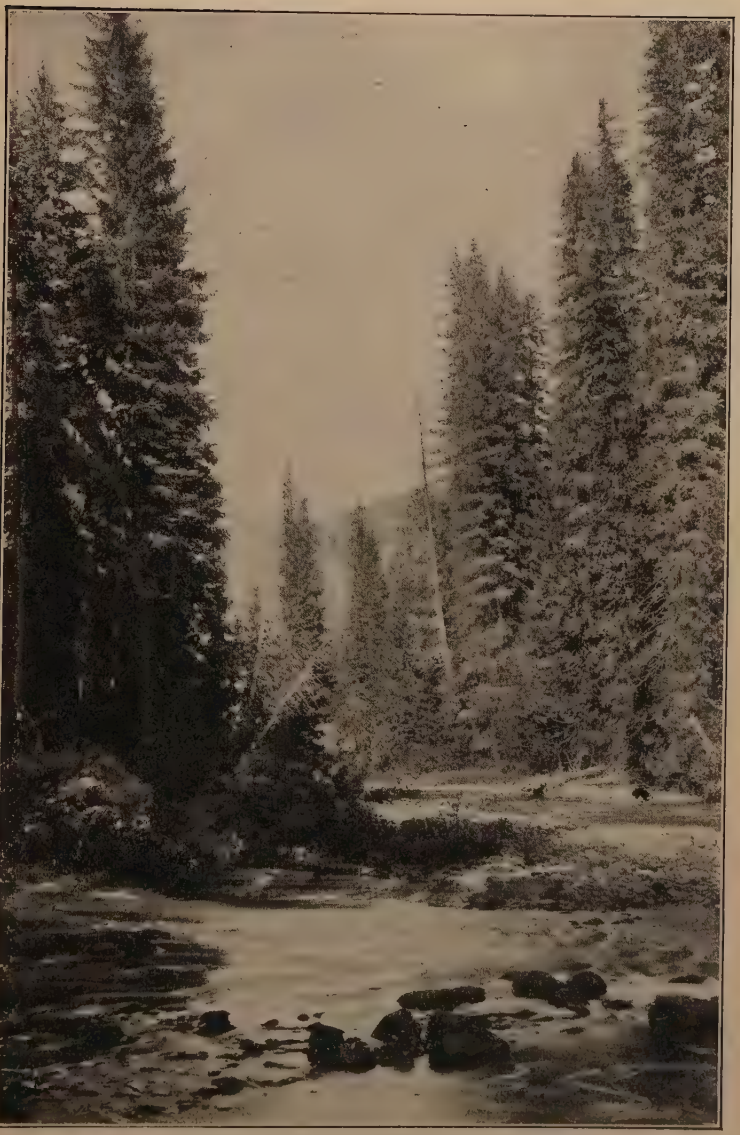
LOOKING INTO THE GREAT CRATER, EXCELSIOR BASIN.

grandeur of Avalanche Basin and the Lake McDonald country, and the glaciers of the mountains north of the international line, bring within reach of the American traveler the marvelous scenery of earth.

As the Main Divide of the Rocky Mountains is the western barrier of the climatic conditions to the east, so the Bitter Root and Coeur d'Alene mountains—the western range of the Rockies—are the eastern barrier of the Columbia Plateau and the entire Northwest coast region.

The Columbia Plateau may be described as the territory lying between the Rocky and Cascade mountains, bounded on the north by the international boundary and on the south by the California and Nevada state lines. This covers the entire state of Idaho and the eastern parts of Washington and Oregon, an area of more than 175,000 square miles, and is drained by the Columbia and Snake rivers, with their tributaries. Although this is the basin of these two great rivers of importance, their immediate valleys are in deep canyons, the plains lying at quite an elevation above. The entire region is volcanic, having at various periods been built up by lava flows, now existing in the form of basalt, the depth being from 3,000 to 4,000 feet. The cliffs of this formation along the rivers are very noticeable and picturesque. The surface of the main plains is devoted to wheat raising, and the immediate river valleys to horticulture, one being entirely distinct from the other.

These elevated plains are much higher than the valley west of the Cascades, but much lower than the Rockies or the Cascades, so that the general country, exclusive of the interior mountains, appears as one great basin. The basin, or plateau, has, however, distinctive features. The Okanogan hills, or mountains of the Colville reservation, culminate in Mount Bonaparte, a snow-capped peak of 6,000 feet elevation, a sentinel for all that region. These mountains are a part of the divide between the Fraser River waters and British Columbia, and the Columbia waters in the United States. To the south in central Oregon are the Blue Mountains, running in a northeasterly and southwesterly direction, extending into southeastern Washington. A spur of the same mountains branches off at about the center of the range and runs in a general southerly direction as far as Harney and Malheur counties in southern Oregon. These mountains are very high, some peaks reaching from 7,000 to 10,000 feet, but, being in the dry region, are snow-capped but a very small fraction of the year. They have aided materially in shaping the courses of the rivers, having turned the Columbia to the westward, sent the Snake and its branch, the Owyhee, in Idaho, on a more northerly and roundabout direction, forced the John Day to round their southern and eastern borders, and parallel the Des Chutes to obtain an outlet. These are the second sentinels of the basin country. The third are the mountains of central Idaho, which include the Saw Tooth, Wood River,



IN THE CEDARS ON MOOSE CREEK, BITTER ROOT RANGE.

Salmon River and Smoky mountains; lastly Thunder Mountain, situated in the very central part of the state of Idaho, the most inaccessible and at the same time the most celebrated, it being the center of a great mining excitement.

The Columbian Basin is known generally as an arid region, for the reason that the clouds, laden with moisture from the Pacific, are held by the Cascade Mountains and forced to give down their moisture on the western side, only a part rising high enough to escape the peaks in their eastward progress. Therefore elevation throughout this region largely gauges the rainfall; the exception to the rule is that moist winds and clouds sweep through the passes of the Cascades, such as the gorge of the Columbia, and cause a greater yearly precipitation than at other points. The Hood River country in Oregon and the Klickitat country in Washington, along the Columbia, are fortunately situated in this respect. In the Okanogan Mountains and on all the uplands near these and other mountains the rainfall is greater than in the depressions of the plateau. The arid regions pertain to the lower part of the basin, as an elevation of 3,000 feet arrests a large portion of the passing clouds which, with the snowfall, affords ample moisture for the growth of wheat. The soil is a volcanic ash, in some places being of great depth. It is capable of absorbing and holding moisture to a high degree, so much so that crops are raised often without a drop of rain from seed time to harvest, the snow fall of the previous winter being sufficient. This soil, when unmixed with sand, does not irrigate successfully. On the contrary, the river valleys, which are arid and have a soil composed of sand and volcanic ash, are susceptible to irrigation and highly adapted to horticulture. In consequence, canals are built, taking the water from the streams, and cheap lands are transformed into wonderful fruit lands at materially higher prices. Nature seems to have been very wise in her provisions. In the Palouse country the richest wheat lands are so steep that they are cultivated with difficulty, and the best results are said to be had at the very top of the eminences. The volcanic soils are very deep, improve with use, and seem to be almost inexhaustible. The Snake River plain is so very extensive that it gets no summer rain, but receives quite a winter snow fall when the neighboring mountains are being covered many feet in depth.

These great plains are celebrated for their wheat crops,

WESTERN FRUIT IS ACHIEVING WIDE FAME.

and from the three ports of Portland, Tacoma and Seattle there is being exported every year from one-tenth to one-eighth of the gross exportations of wheat from the United States. The valleys are becoming celebrated the world over for fruit; Hood River, Oregon, for its strawberries and apples; the Snake River Valley for apples and prunes; the Yakima River Valley for apples; and Wenatchee for apples and garden stuff. All these localities raise peaches as well as apples. The preparations for irrigation along the Des Chutes River, in eastern Oregon, and in southern Idaho along the Snake River Valley are wonderful to contemplate.

The extent of really arid land east of the Cascades is now so much a matter of uncertainty as to lead to many controversies between those who would furnish irrigation systems for profit, and the people who are ready to take the lands for cultivation without canals, for vast regions have been reclaimed, as the Great Bend of the Columbia region in eastern Washington was, without water. People are remembering how settlement and cultivation in Kansas and Nebraska conquered the "Great American Desert." Time is doing the same work in the supposed arid region east of the Cascades, pulverizing the volcanic matter, loosening it, and aiding it to absorb moisture. Throughout the actual irrigation regions steps are in progress for extensive work, both under government control and private management. These are by natural reservoirs, by artificial reservoirs, and by ditches to direct water from the streams. These canals, or ditches, are often many miles in length, with tunnels and flumes, costing large sums of money. The plan of private operation is either to mortgage the lands to pay for the improvement, or to give a part of the land—one-half of raw land, one-third of improved land—and a rental of $1.25 per acre annually as the water is delivered. Original cost, maintenance of co-operative ditches, and those under the Carey act, will be given with their localities.

The climate of the Columbia Basin is materially milder than the Montana plains east of the Rocky Mountains, and considerably colder than the country west of the Cascade Mountains, bordering on the ocean. The temperature varies considerably with the altitude, but there are no extremes of heat or cold. There is little cold weather during the winter, which is very short, and though snow falls over the whole territory it is melted by the prevailing southwest winds, which

moderate the climate fully 25°. These winds come from the warm current off the coast and are commonly known as the "Chinook winds."

IN THE CASCADE RANGE.

We now come to the Cascade Range of mountains, a continuation of the Sierra Nevadas of California, which have the most marked effect upon the climatic conditions of the Pacific Coast and especially the Pacific Northwest of any of the mountain ranges. It is a compact range, varying in the

average height of from 4,000 to 8,000 feet, running parallel to the coast line about 100 miles, and dividing two very dissimilar regions. Many of its inland peaks rise above the snow line and in their robes of white are of great interest to the traveling public. Beginning on the north, near the boundary line, the first peak of note is Mount Baker, 11,100 feet in height; south and east of Puget Sound, standing out from the main range almost solitary, probably the most symmetrical mountain on the Pacific Coast, is Mount Rainier, or Tacoma, height 14,526 feet; two volcanic peaks come next —Mount Adams, 12,225, and St. Helens, 10,000 feet; south of the Columbia stands Mount Hood in all its grandeur, another volcanic cone, 11,225 feet in height; still farther south are Mount Jefferson, height 10,200 feet, and many peaks ranging from 6,000 to 9,000 feet. This range is the western barrier of the Columbia Basin and the eastern boundary of the Pacific Coast region proper. West of the Cascade Mountains, and like them, running directly parallel to the sea shore, is the Coast Range, a broken and disconnected range of mountains, at an average height of perhaps 3,500 feet, rising in its highest peak, Mount Olympus, to 8,000 feet. In the Olympic Mountains they stand out in high and majestic beauty, while farther south they are broken but rise again in southern Oregon to meet the Siskiyous.

There is but little level country between this range and the sea, but the country between the two ranges is mostly a valley, extending from and including that multiplication of inland bays and harbors known as Puget Sound southward through Washington to the Columbia and through the entire length of the Willamette River to the Calapooia Mountains. This range is a spur of the Cascades, which runs east and west and divides the Willamette Valley from the Umpqua Valley, and again farther south, another east and west range divides the Umpqua Valley from the Rogue River Valley. In the great process of erosion the Columbia and Fraser rivers broke through the Cascade Range on their way to the sea. These gorges contain considerable wild and grand scenery, a never ending delight to the passengers by the railroads using these passes as highways. The Columbia River is nine miles wide twelve miles above its mouth, and seventeen miles wide some distance farther up. During its whole course it is a deep flowing lake or swift flowing river. It drains 500,000 square miles of territory, while the entire por-

tion of the United States, east of the Mississippi, is but 875,000 square miles.

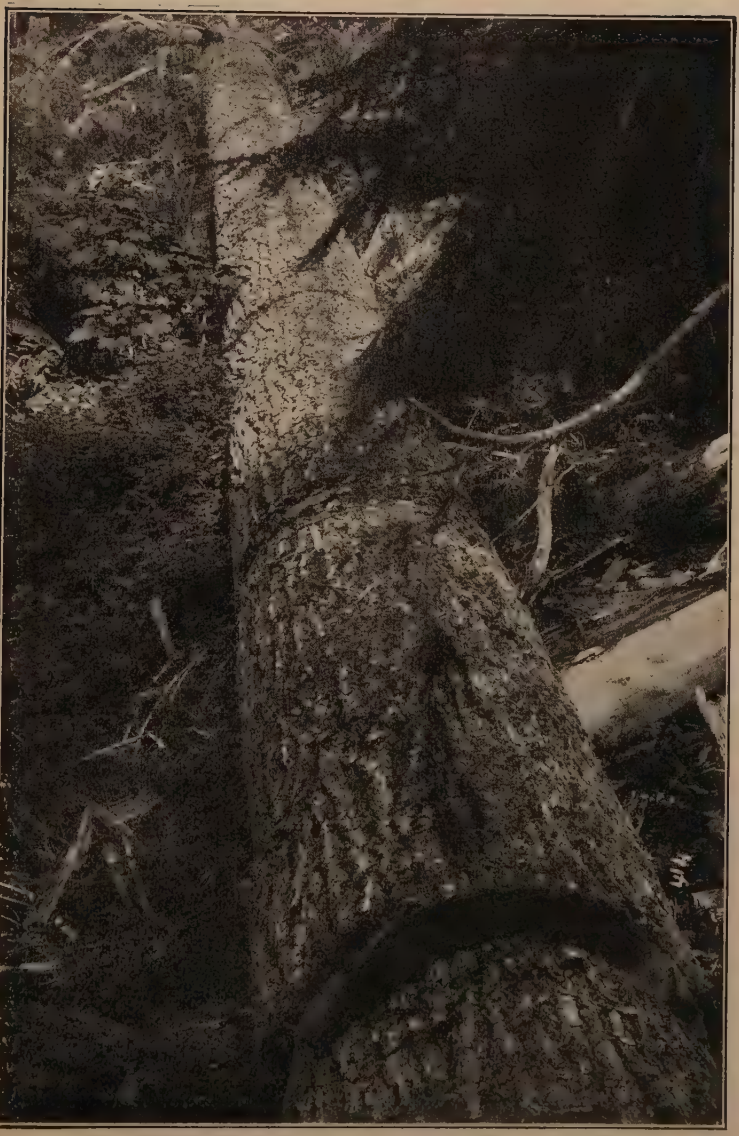
The entire territory west of the Cascades is of very moderate temperature with a humid atmosphere, the rainfall reaching over 100 inches near the coast in Oregon and Washington annually. The mildness of the climate is supposed to be due to the Japan ocean current, which is very warm and flows in close proximity to the coast. In low altitudes snow is extremely rare and there are no extremes of heat and cold. The mercury seldom reaches 90° in summer, and the

THERE IS FERTILE SOIL IN THE WEST.

isothermal of 45°—55° annual temperature—runs in serpentine lines over the entire region. Farmers plow during all months of the year. The cause of the great precipitation is attributed to the moisture-laden clouds rising from the warm ocean current and being driven by the winds against the mountains, and there squeezed out like sponges. The rain is not continuous throughout the year, for there is what is known as a wet season and a dry season, which correspond to the winter and summer season, the former beginning about November 15 and ending about March 15. During the wet season the rain falls about three-fourths of the time. There

is a complete absence of violent electrical storms on the entire Pacific Coast, thunder and lightning being exceedingly rare, and there is also a remarkable freedom from flies. Though warm weather is had during the day in any time of the year, it does not signify that the evenings will be warm, for there is no time when blankets are not needed at night.

TIMBER.—The extreme humidity of the territory west of the Cascade Mountains necessarily produces the most favorable conditions for a rank growth of vegetation. The whole western slopes and valleys are or have been covered with a dense growth of evergreen timber, the most wonderful body in the world with the exception of the redwoods of California. Near the higher elevations of the Cascades, where the rainfall is the greatest, the timber grows to extreme heights without a limb. Forests are scattered in tracts along the higher land, east of the Cascades from California northward. Eastern Oregon affords several especially fine bodies near the head waters of the Des Chutes, and Washington, near the Columbia, and in the Okanogan Mountains; in Idaho are scattered tracts throughout its mountain region, with a very large body in the Panhandle and the Kootenai, extending into Montana. The heaviest timber is to be found near the coast. The area in timber is estimated at over one billion acres, and the merchantable lumber standing on it is believed to approximate four hundred billion feet. The timber is mostly of the deciduous varieties and includes the Douglas, or Oregon fir, red and white cedar, and several species of pine, hemlock, and other woods. There are some hard woods, but they are of small growth. They are found mostly in the southern part. Considering the length of time the forests should last in commerce and manufacture, it may be stated that the largest amount of lumber cut to this time has been two billion feet, the combined product of Washington, Oregon and British mills for the year 1902. It would therefore appear that at this enormous rate there is enough to last for 200 years. Great loss has occurred from forest fires, but the government has lately inaugurated large forest reserves and it is expected this loss will be prevented in a large degree by the patrol system thus established. Of any timber manufactured into lumber, probably the spruce and fir of this region are the largest in the world, excepting only the California redwoods. The dimensions of this timber quite surpass belief, there being fir logs fourteen feet, and spruce logs



SIX TWENTY-FOUR FOOT LOGS FROM ONE TREE. OREGON FIR.

sixteen to twenty-five feet in diameter, with trees standing from 150 to 200 feet high, with a record of 351 feet. In the order of the value of production, lumber is the largest industry, wheat a close second, the mines contiguous to the agricultural country third, and fisheries fourth.

Agricultural Products.—In 1900 the export of wheat from the Pacific Northwest was 36,000,000 bushels; in 1901 one county in Washington (Whitman) with a population of 30,000, raised 6,000,000 bushels of wheat, and one county in Oregon (Umatilla) with a population of 18,000, raised 4,500,000 bushels; this, with the live stock, wool, etc. sold, brought a total of $195 for every man, woman and child in the county. The same year, exclusive of British Columbia, the Pacific Northwest raised 7,000,000 bushels of potatoes, or one-twentieth of the average crop of the United States. The stock, dairy and wool interests, with cereal and other crops raised are treated in connection with the different localities. The wheat empire, generally speaking, is co-extensive with the basaltic soils, and contrasts with the Crimean plains of Russia. With millions to be fed in China and other lands near to this "Inland Empire," and with cheap transportation, it is easy to see why the wheat raiser as well as the stock-grower is getting rich. In the days of the small farmer in the east the cost of raising wheat was fifty cents per bushel, not far from the price it brought on the market. To-day, in Washington, with the extensive system of farming, with broad fields and combined harvesters and threshers—thus saving the stacking and sweating process—sacking in the fields and hauling on the good, dry roads, the cost is reduced to from twenty-five to twenty-eight cents, while the price obtained for the crops stands about fifty cents per bushel, which gives a profit of about 100 per cent.

Mines.—The mines of the Pacific Northwest are producing millions annually. It should not be forgotten that the Northwest has produced the greater part of the gold in the United States treasury, which at the beginning of 1903 amounted to nearly $600,000,000. The placers of Alaska, furnished $25,000,000 in gold during 1902. Included in this is the product of the Klondike, the greater part of which came to the United States. The production of gold and silver in the different states for 1902, as estimated by director of the mint at Washington, is as follows:

AT WORK 1,300 FEET BELOW THE SURFACE.

Source of produce.	Gold, value.	Silver, commercial value.
Alaska	$ 7,823,793	$ 30,061
Arizona	4,155,099	1,680,100
California	17,124,941	480,793
Colorado	27,502,429	9,085,714
Idaho	2,067,183	3,180,000
Montana	4,134,365	6,890,000
Nevada	3,514,212	2,120,000
Oregon	1,860,465	63,600
South Dakota	7,398,057	182,373
Utah	3,720,930	6,360,000
Klondike	14,562,191	91,768

This places the total amount of gold at $80,853,070, and of silver at $31,040,625.

The production of copper in Silver Bow County, Mont., alone, is about $60,000,000, or about one-fourth of the entire production of the world.

Coal is well distributed and plays a very prominent part in the mining economy of the entire Northwest.

FISHERIES.—The salmon industry has grown to a wonderful point and has been perfected within the past ten years. The question is only whether the salmon are being depleted. The coast states are endeavoring to maintain the supply by propagation, the salmon waters being restocked at the rate of 50,000,000 a year, one-half furnished by the United States hatcheries, the other half being divided between Washington and Oregon.

LANDS.—To encourage emigration the railroads have each year offered and maintained a homeseekers' rate, about half the regular price charged, and the surprise is that while lands in the east are selling for from $50 an acre up, that the free lands of the west, the richest in the world, have not been taken faster when they offer so many inducements. Emigration is rapidly reducing the quantity, but millions of people may yet find government lands for homes. Enormous areas in British Columbia are offered under English laws. Alaska is as yet untouched, and there is much excellent land in what seems to be a far off country. In Washington, Oregon and Idaho, on January 1, 1900, there was opened for settlement approximately 90,000,000 acres of land, or an area equal to one-twentieth of the total area of the United States. These have been going to homesteaders and purchasers by script and otherwise at the rate of 5,000,000 acres per year. These lands

are free, except for the small government charge of $16 at the land office. Where reservation lands have been opened $1.25 per acre additional must be paid to the government.

EMIGRATION.—The old buffalo trails may yet be seen in northern Montana in places where the ranging cattle have not obliterated them, but no buffalo are left, save those in corrals and parks. The Indian tepee is seen at infrequent intervals throughout the west. The only tangible remnant of the North American Indian are the 15,000 full bloods and their half white brothers in the prospective state of Oklahoma, and the few northern Indians practically corralled upon the

A FISH WHEEL ON THE COLUMBIA RIVER.

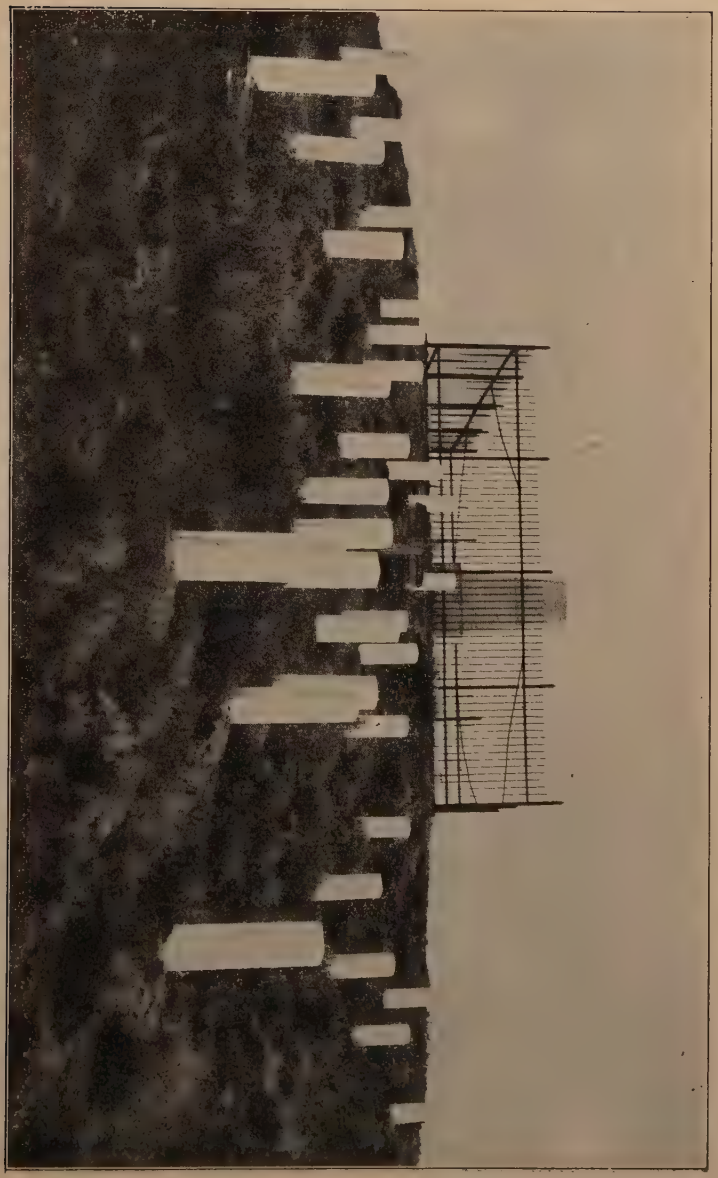
reservations. The legendary days of the buffalo and the Indian are all that is left. The loves of Hiawatha and Minnehaha will be sung in future years, and history will recount the fierce combats with Sitting Bull and Geronimo, but the majesty of the Indian, his independence and his individuality, have gone with the buffalo, never to return, and all within a few short years. The Indian gave place to the pioneer, the stockman and the railroad. The stockman is now giving place to the diversified farmer. Few people outside of the ever-changing west realize the effects of the waves of emigration that have swept over that country.

The tides of emigration to the Northwest of to-day began in 1879. Another wave succeeded it in 1883, and again in

1887, decreasing, however, during the next two or three years. The present wave of emigration is greater than those which preceded it, and differs materially from any of the others. The first settlement of the Minnesota Northwest was made by Americans in wagons, with but few dollars and their outfit, and by foreigners direct from Castle Garden, who settled upon the land under the Homestead Act. The present emigration chronicles the sale of these lands originally taken throughout the Mississippi Valley at a price approximately of $50 per acre to the farmer of the extreme eastern and middle states. With this money in hand the new capitalists, by rail instead of by wagon, proceed to the Pacific Northwest to seek new lands at undeveloped prices. It is estimated that during the spring of 1902, 162,000 homeseekers passed over the northern railway lines, 67,000 of whom settled in Montana or farther west, 10,000 going to Oregon, 50,000 to Washington, and 7,000 to Montana. A portion went to Idaho, which fact is probably taken into account in the Washington figures. Fifty thousand settled in South Dakota, 12,000 in Minnesota, and 8,000 in North Dakota, while 25,000 went to Manitoba. These figures do not take into account those coming over the Union Pacific Railway, this number being estimated at 36,000.

The intense desire to obtain cheap lands has caused an overflow of the American settler into Canada far beyond any belief. A Manitoba paper puts the estimate at double the figures herein given. This is caused by the fact that the American citizen is not forced to take an oath of allegiance in order to obtain the land, which may be purchased outright. The majority of these settlers went to western Manitoba and Assiniboia.

A large amount of land has been taken under the timber act for the value of the timber upon the land, and the choicest homesteads have also been settled upon, but there are large amounts of lands as rich as any of those already taken, lacking only the water to make them fertile and only partially so at that. To open up these areas the government is inaugurating systems of irrigating reservoirs. There is no doubt of the irrigation age being at hand instead of in the future. Those who have been slothful in the past years of low prices of commodities are now waking up and will settle the entire domain as fast as Uncle Sam will reclaim it. As it is accomplished, another wave of emigration will roll over the west,



MONUMENT AT LAST STAND, CUSTER BATTLEFIELD.
Lee Moorhouse, Am. Photo. Pendleton, Ore.

and the settler can begin at the Dakota line and come westward with the tide as those before him did, for the great Milk River district, in northern Montana, will open fully a million acres to settlement, as will numberless other valleys.

The Pacific Northwest is young and mighty. The resources have been developed to some extent, but the possibilities are beyond the majority of the other states which form the American Union.

COMMERCE.—The line of the world's commerce beyond the coast lies north of California. The Northwest has to-day a commerce the marvel of the world in volume, scope and energy. Trans-continental lines connect with the east and south, and ships, the mightiest on earth, are now being built for the Oriental trade, which has developed into enormous volume within a short period of time. The cities of Portland, Tacoma, Victoria and Vancouver are not only connected with each other by a net-work of lines, but they reach out to Alaska and the south and to the Orient.

In a recent address, James J. Hill, President of the Great Northern Railway, made the declaration that the trade with the Orient is the oldest commercial trade in the world, that the commercial nations from the earliest dawn of history have sought it, and that it has built up more cities in the world than any other trade.

But the trade of the Orient is comparatively new to the United States, the line of transportation having heretofore been to the eastward rather than to the westward. The people of the Orient with whom we are enabled to trade constitute fully one-half of the population of the earth. Ten years ago we sold Japan annually $5,000,000 in goods, and purchased $30,000,000. To-day we sell this nation $30,000,000 and purchase $9,000,000 annually, which shows the development of the trade along these new lines. The nation that is now about to be opened to commerce is China. The Chinese empire is more populous than Japan, and the better classes are more able. To-day China purchases annually from the United States over three hundred millions and should purchase one billion dollars. The traffic to the Orient is largely a matter of food products. Though the shipments of flour from Puget Sound ports and from Portland have reached magnificent proportions, the traffic is susceptible of enormous development. During 1901 the flour used in China would equal, in the wheat form, about 18,000,000 bushels; for the year ending June

EXCAVATING FOR AN IRRIGATING CANAL.

30, 1902, the exports of flour from Puget Sound to the Orient and South Africa amounted to one and a quarter million barrels. Steel rails have been shipped to Japan, and cotton, the value of which reached several million dollars, has been shipped to various ports of the Orient. A single Puget Sound line to the Orient was compelled to refuse in a single month 30,000 bales of cotton from the southern states, from the lack of ships to carry them.

The movement of lumber from the forests of Puget Sound to the east, at a fair rate, necessitates the cars being loaded on their return. The lumber and shingle shipment for this long distance enables the railroads to make a short rate on cotton and products bound for the Orient, and thus a basis for this trade has been established. The wheat that is raised on the basaltic plains of the Columbia Basin has a near and ready market toward the setting sun in exchange for tea, sugar, silks, etc. The trade, now in its infancy, is lacking in ocean transportation, and larger ships with greater carrying capacity are being built than ever before.

The distance from the ports of the American Pacific coast are much nearer the Oriental seaboards than New York or the European cities. A few figures will readily show the advantage. The distance from Liverpool to Canton is 10,900 miles; San Francisco to Canton, 6,800 miles. From San Francisco to the Amur River, 3,900 miles; to Vladivostock, 5,750 miles; from Liverpool, 13,550 and 11,750 miles respectively. The difference in favor of San Francisco amounts to several thousand miles, and the ports of Puget Sound are several hundred miles nearer Asia than San Francisco, for the degrees of longitude are less in miles in proportion to their distance from the equator.

The Pacific Ocean has become the center of a commercial battle now raging, and the inhabitants of the north Pacific Coast are the ones who will determine the results and reap the rewards. They are the nearest neighbors of the people to the west (not to the east) and are enabled to visit them weekly with their ships and goods for barter. A step to Hawaii, a second to the Philippines, and lo! a magical change took place and a continual stream of goods poured into these countries, whose internal workings ten years ago were a sealed book.

With lines of American steamships, built in American shipyards, owned by American capital, officered by American seamen, and plying between the North American seaboards and

MINNESOTA STATE CAPITOL, ST. PAUL, MINN.

Oriental ports, the predominance on the Pacific Ocean is assured to the United States.

MINNESOTA.

Minnesota, the land of a myriad of beautiful lakes and highly cultivated farms, is the first state traversed on a trip from the twin cities—St. Paul and Minneapolis—to the Pacific Coast over either of the northern routes. This state adjoins the Dominion of Canada, and has an area of 83,365 square miles, of which 4,160 square miles are water. Its population to-day is more than 2,000,000 people. In 1900 the unappropriated lands in this state comprised more than 4,000,000 acres, of which over 2,000,000 were unsurveyed. These lands lie mostly in the extreme northern part of the state, which is generally a timbered country and is at present distant from railway transportation. Two-thirds of the state is a fertile prairie country, the larger part of which has been settled up during the past thirty years and is now devoted to diversified farming; in the southern part the improved land has a value of about $50 per acre.

The early history of the state is like that of many others, a fierce struggle with the Indians for mastery, in which several atrocious massacres took place. Wheat was the great staple in the early days, but this cereal in the southern part of the state has given place to corn, cattle, and dairying, and in consequence of its exceedingly succulent grasses the fame of that locality is becoming as wide as that of Wisconsin, which produces more butter and cheese than any of the other states of the Union. The state is separated from North Dakota on the west by the Red River of the North, in the valley of which the wheat fields are very extensive, reaching the size of small European principalities. These farms are operated on a systematic and well regulated plan. The soil of the valley is very deep and fertile and shows no sign of deterioration after being sown to one crop for twenty-five years. The Red River Valley will be spoken of again with North Dakota. The northern part of the state is mostly covered with pine timber, which has been manufactured by mills along the Mississippi River for the past half century, adding much to the wealth of the state. In the extreme northeastern part

are extensive hemetite iron mines, perhaps the largest on the continent. From these mines the blast furnaces of Ohio and Pennsylvania are furnished with the raw material from which the major portion of the iron and steel rails used in the United States is made.

The city of St. Paul, the capital of the state, situated at the head of navigation of the Mississippi River, and Minneapolis, situated nine miles distant at the Falls of St. Anthony, the two having a combined population of fully 400,000 people, are termed the "Twin Cities." They are very strong

THE TOWER OF OLD FORT SNELLING, MINNESOTA.

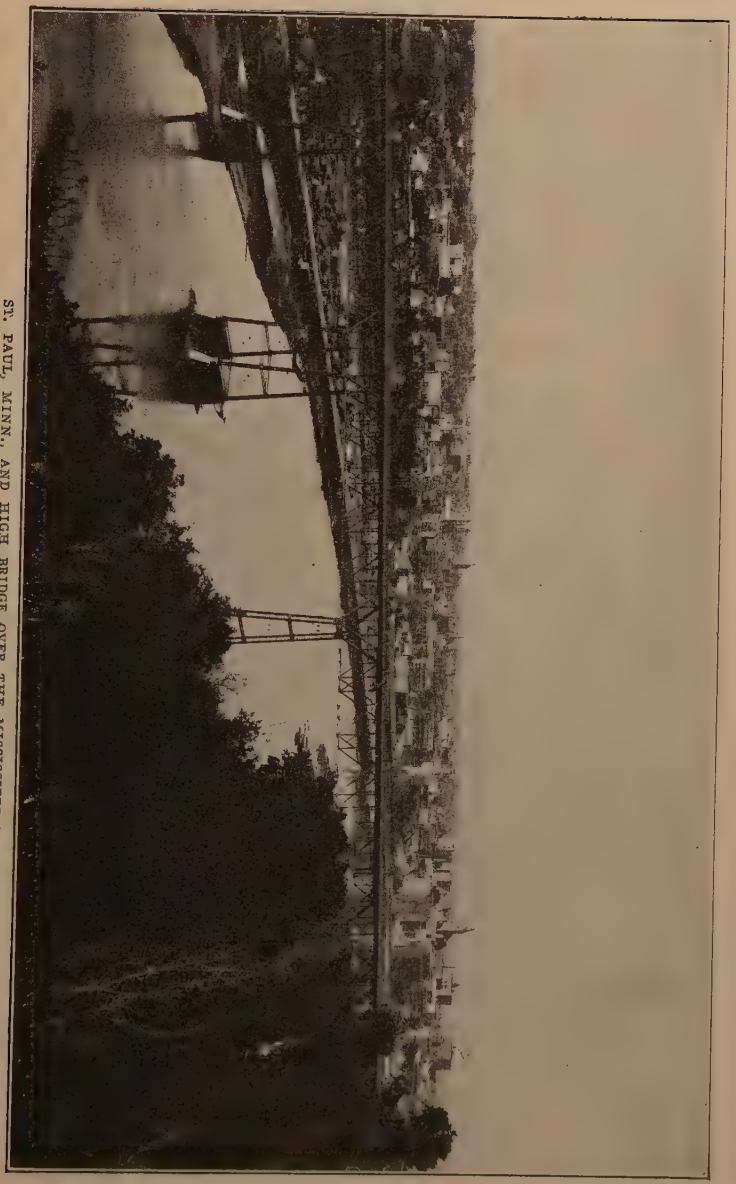
commercially and are surrounded by an empire rich in resources; to the south are corn, cattle and dairying interests; to the east, north and northeast, forests of pine timber and extensive iron mines; to the northwest extensive wheat fields and stock ranges. In addition these cities are one of the great railway centers, as ten railroads radiate from them in all directions, while two trans-continental lines have their terminals and headquarters in St. Paul. The remarkable feature of Minneapolis is its water power and the manufactures connected therewith. In 1900 it manufactured the enormous amount of 594,370,000 feet of lumber. More than ten years ago Minneapolis became the first lumber producing

city in the world, which supremacy will probably be maintained until the northern lands are denuded of their forests. In 1900 the city received 83,312,320 bushels of wheat, which makes it the largest wheat market of the world. During this year 15,082,725 barrels of flour were produced from this wheat, showing that a large percentage of it was ground in the city before leaving for the east. This is more flour than is produced by any other city in the world. Its mills have the largest capacity, which is over 27,000,000 barrels per year, and the largest mill. Not only has Minneapolis the largest mill, but it has the largest elevator, with a capacity of 30,000,000 bushels, or enough to store at one time one-third of the annual receipts of the entire city.

St. Paul is known as the main jobbing center of the state, the city has various manufactories of boots and shoes and all the intermediate articles, with a banking capital equal to any emergency. The cities are romantically located, have extensive park systems, especially Minneapolis, and fine streets and residences. Between the cities are located Fort Snelling, at one time the Indian military outpost of the country, and the Falls of Minnehaha, made famous by Longfellow's poem. The lakes of the state are not marshes, but pure, clear, sky-tinted waters, pleasant to look upon. They are filled with fish and in season with ducks and geese in profusion.

Duluth, "the Zenith City of the Unsalted Seas," is located on Lake Superior and the St. Louis River, the extreme western shore of the great lakes, and if a deep waterway to the Atlantic is ever effected this city will become an Atlantic seaport. To-day it is a water terminal of the Great Northern and Northern Pacific railways, has large elevator capacity, and handles nearly as much wheat as Minneapolis. Its flour mills are also becoming celebrated. A fleet of several hundred vessels takes the different tonnage from this port, through the Sault Ste. Marie Canal to eastern ports. The city is built upon a hillside, overlooking Lake Superior, and has a population of about 75,000.

Taking the state of Minnesota as a whole, it is ramified by many railroads, the Great Northern, the Northern Pacific, and the "Soo Line" covering the northwestern part of the state.



ST. PAUL, MINN., AND HIGH BRIDGE OVER THE MISSISSIPPI RIVER.

NORTH DAKOTA.

North Dakota is an immense stretch of level and rolling pairie land and river valleys, with numerous small lakes. Its area is 70,795 square miles and its population 319,146. The Red River of the North, which is the eastern boundary of the state, forms a valley including that part located in the state of Minnesota, comprising a tract of land 250 miles long, with a width of from fifty to 100 miles. This valley is almost a level plain, with a descent of from one to two feet to the mile, sloping to the north, in which direction the river runs.

A BIT OF DULUTH AND HARBOR.

It is so nearly level that the currents of the streams are quite sluggish. The altitude above sea level at Fargo on this river is 902 feet, and at Pembina, on the boundary line, 789 feet. This entire valley is very fertile, the soil being a black loam, with a subsoil of alluvial clays, mixed with drift, sand, and gravel. The valley has an area of about one-thirteenth of Minnesota and North Dakota together, and produced in 1902 fully 40,000,000 bushels of wheat, or more than twenty-five per cent of the crop of the two states combined. The products of this remarkable valley have made the state celebrated in all countries. For twenty-five years it has been raising No. 1 hard wheat in such quantities that led to its being called the "bread basket of the world." Perhaps no

country of like area has been so productive of the cereals. The land is under a high state of cultivation and the country is dotted with beautiful homes. The farms have been heretofore what is known as "Bonanza" farms from their extent, some comprising from 30,000 to 40,000 acres. These farms are now being subdivided, and there are other lands to be ob-

STREET SCENE IN DULUTH.

tained which have been partially cultivated, or even raw lands, which will produce in the same proportion as those previously tilled.

The Red River Valley proper includes the counties of Pembina, Walsh, Grand Forks, Traill, Cass, and Richland, in North Dakota, and Kittson, Marshall, Polk, Norman, Clay, Red Lake, and Wilkin, in Minnesota, the heavy black top soil

of the valley readily marking its boundary. The valley is not thickly settled, and the price of land is low compared with its value, though it has advanced nearly 100 per cent since 1900. Throughout this state land can be had from $5 to $30 per acre. There are no good homesteads outside of the arid belt left in this state. The soil of central Dakota is a black loam, varying from two to three feet in thickness; it has a clay subsoil, which retains the moisture of the winter and early spring in reserve for summer use, and its fertility is remarkable. The Red River Valley has ample rainfall, which gradually decreases toward the west until the Missouri Coteau is reached, beyond which irrigation is required. From the Turtle and Pembina mountains, along the boundary line to the south, the descent is gradual to Devil's Lake, which has no visible outlet and whose waters are salty, or alkaline.

Between the Turtle Mountains and the Missouri River lies the Missouri Coteau, a grassy upland country extending across the state from northwest to southeast and forming the eastern watershed of the Missouri. The plateau affords evidences of the great glacial lake, which in prehistoric times extended from Lake Winnipeg to Oklahoma. Of this vast lake the Red River and Lake Winnipeg country was the very bottom or basin, and the smaller lake formed there afterward is known to geologists as Lake Agassiz. The Missouri Coteau formed a section of the western shore line at one stage. The country east of the Coteau is a rolling prairie sloping to the southeast, drained by the Cheyenne and James rivers. The Mouse River enters the United States near the Coteau, and after a wide circle returns to Canada west of the Turtle Mountains. This is a good wheat valley. The Little Missouri, the Heart and the Cannon Ball rivers water the western part of the state and discharge into the Missouri River on the west. The whole southern and central part of the state is good wheat land, save the so-called "Bad Lands" in the extreme southwestern part, which comprise a belt twenty-five miles wide and one hundred miles long, and follow the Little Missouri River. This land, once a level plain, has been cut by the branches of the Little Missouri and the action of fire from burning lignite coal seams, so as to form a labyrinth of gullies, buttes and figures of all sorts, in which the novice would become irretrievably lost. East of Medora, where the Northern Pacific crosses the Missouri River, the buttes are of a blood-red color; in places petrified stumps and trunks

ON THE JAMES RIVER, NORTH DAKOTA.

of trees are brought to the surface, and at a number of places coal veins are still burning beneath the surface of the ground, sending forth sulphurous fumes through fissures in the earth. This whole country, however, is covered with grass, and is one of the finest cattle districts in the west. A special merit of the bad lands is that stock is sheltered in the ravines during the winter.

The winters of North Dakota are sometimes very cold, but the air is dry and the cold is not severely felt. The extreme range of temperature is 105° to —44°, and the annual rainfall for the major part of the state is eighteen inches. Large areas in the western part of the state, especially west of the Missouri River, are underlaid with lignite coal of good quality. In the Turtle Mountains, at Burlington, at Kenmare, at Harvey, in Wells County, and at Washburn, in McLean County, coal is being mined and sold at a profit, nearly fifty coal mines being operated in the state to some extent. In the "Bad Lands" coal seems to exist in some places six to eight feet in thickness, and it is not uncommon for farmers to have coal mines on their farms.

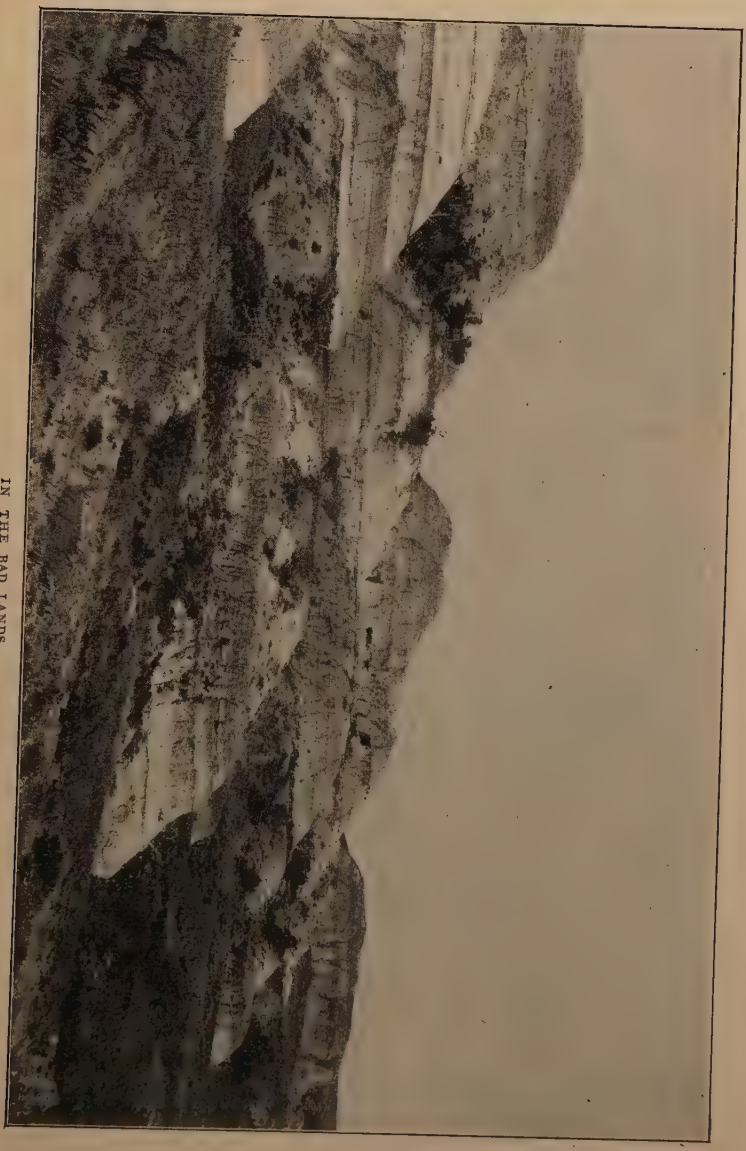
The Northern Pacific Railway traverses the middle southern portion of the state, having been built as far as Bismarck in 1873. The Great Northern crosses the middle northern portion of the state from east to west, and the "Soo Line" crosses the state in a northeasterly and southeasterly direction, entering Canada by the Mouse River Valley. The Great Northern and Northern Pacific reach Winnipeg in Manitoba Province through the Red River Valley.

Bismarck, the capital of the state, has a population of 3,319, is situated on the Missouri River at the crossing of the Northern Pacific. Jamestown, with a population of 2,853, is a prosperous town ninety-eight miles east of Bismarck.

Fargo is situated on the Red River and the Northern Pacific and Great Northern railways, and is the commercial center of the state. It has a population of 9,589.

Grand Forks is the commercial center of the northeastern part of the state, lies in the heart of the Red River wheat belt, and has a population of 7,652.

There has been quite a boom in North Dakota lands during the past two or three years, since it has been learned that nearly the entire state produces most all kinds of crops. In 1901 the crop of wheat produced was $45,741,618 bushels; flax, 12,868,088 bushels; oats, 20,740,314 bushels; barley,



IN THE BAD LANDS.

0,140,437 bushels; corn, 1,282,082 bushels; potatoes, 2,031,608 bushels, and there was live stock sold to the value of $5,306,167.

A DAY'S HUNT IN NORTH DAKOTA.

The Commissioner of Agriculture and Labor reports for the year 1901 38,801 cultivated farms and over 20,000 combined ranches and farms, forty-three lignite coal mines in operation, eight cheese factories and thirty-eight creameries.

MONTANA.

The name Montana is from the Spanish language, meaning mountainous, and the state is known as the "Bonanza" or "Treasure" state, from its mountains containing such vast mineral deposits. It is bounded by the Canadian provinces of Alberta and Assiniboia on the north, the Dakotas on the east, Wyoming and Idaho on the south, and the latter state on the west. The average length of the state from east to west is 535 miles, and the breadth from north to south 275 miles, comprising the great area of 140,080 square miles, or, approximately, 94,000,000 acres. It is the third largest state in the Union, and by the 1900 census had a population of 243,329.

Early History.—As early as 1742 the French voyageur, Verendrye, and his sons traversed this state in quest of furs and camped at the base of the Rocky Mountains. In 1805 the now famous Lewis and Clark expedition ascended the main rivers of the state, marvelled at the falls of the Missouri, named the head waters of that great river, climbed the Rocky Mountains, and passed on to the Pacific. Retracing

their steps by a shorter route, they explored the Marias and Yellowstone rivers and returned to the then settled part of the United States. Their names are now indelibly inscribed on the geography of the country.

Montana's rich storehouse of nature had been, since the earliest discoveries, either in the possession of France or

IN PYRAMID PARK, NORTH DAKOTA.

Spain, but in 1803 Napoleon, being short of money, bargained it to the United States with the other territory constituting what is known as the Louisiana Purchase.

Following the superficial knowledge thus learned, Emanuel Liza, of St. Louis, in 1809 established a trading post on the Yellowstone, and in 1827 Fort Union was built at the mouth of the Milk River by the American Fur Company. The first step toward navigation of the Missouri River was in 1832,

when the steamboat Yellowstone arrived at Fort Union; in 1835 the steamer Assinniboine came up as far as Fort Buford and ascended the Yellowstone River for about sixty-five miles; and in 1846 Alexander Culbertson built Fort Benton, and the steamboat Chippewa, in 1860, reached that point and established it as the head of navigation, and it so remained, going into the annals of history as the extreme outpost of steam communication until the transcontinental railroads were built. It enjoyed a great trade in furs, buffalo hides, etc., in exchange for goods, and it took an entire season for a boat to make the round trip from St. Louis, running many risks from the quicksands and changing sand bars of that capricious stream, and the many dangers from attacks by Indians, who became gradually more belligerent toward the white man until they were subjugated. The Catholic missionaries followed the fur traders and the trappers, Father De Smet founding St. Mary's Mission in Ravalli County in 1802. He is given the credit of having sown the first wheat field at Stevensville and of building, in 1845, St. Ignatius' Mission, with a school for boys and girls. The latter is the mission on the present Flathead Indian Reservation, in Missoula County. Thus religion, education, agriculture, and commerce were all given an impetus within a very few years. After this spurt slow progress was made toward civilization and settlement, though the territory of Montana was organized in 1864 and a capital established at Virginia City. The Indian and buffalo roamed the plains, and only the hardy trapper, hunter, or prospector was willing to take the chance of exploration or settlement thereon.

Attention to the mineral resources of Montana was first called by a Red River half-breed named Finlay in 1852, who discovered placer gold on what is now Gold Creek, in Powell County. In 1858 the Granville Stewart party worked placer claims successfully near the present town of Pioneer. Following this came the discovery of rich ground at Bannack, Alder, and Ophir, and in August, 1864, of Last Chance Gulch, now the location of the city of Helena, which in 1875 became the capital of the state, and of several hundred other placers, which produced so well that many millions were added to the gold of the world, and the search for the yellow metal took the place of trapping and fur trading.

The first quartz mill, a rough affair, made from wagon irons, was set up at Bannack in 1862, and the first smelter

MAIN STREET, BISMARCK, N. D.

BRIDGE OVER THE MISSOURI RIVER AT BISMARCK, N. D.

was erected at Argenta in 1867. The act admitting Montana as a state passed Congress February 22, 1889, and the admission took place November 8 of the same year. The first railroad was built into Montana from Ogden, Utah, as a connection of the Union Pacific, in 1881. The Northern Pacific arrived at Helena in 1883; the Great Northern at Kalispell in 1891. The completion of the roads solved the transportation problem and the steamboat traffic became a thing of the past. The completion of the Northern Pacific, the first transcontinental line through Montana, was accomplished amid great rejoicing and all day celebrations at St. Paul and Minneapolis. The Custer battle was fought on the Little Big Horn in 1876, the Indians were finally placed upon agencies, under government surveillance, and a new era set in.

INDIAN SCHOOL, ST. IGNATIUS MISSION, FLATHEAD CO., MONTANA.

Topography.—Although the name of this state conveys to the mind of the reader that it is mountainous, yet less than one-third is strictly so. The state is divided into two sections, with distinctly different characteristics, the region of the plains comprising the eastern two-thirds, and the mountainous the remaining one-third. The former section is a rolling expanse of prairie, gradually rising from the east to the Rocky Mountains, broken only by the valleys of the rivers and a few isolated groups of mountains. The plains rise from about 2,000 feet elevation at the eastern boundary of the state to about 4,000 feet at the base of the Rocky Mountains. Hayden's survey gives the average altitude of the state as 3,900 feet. The United States Bulletin says it has been ascertained that forty per cent of the state is under 5,000 feet elevation, twenty-one per cent from 5,000 to 6,000 feet, fourteen per

cent from 6,000 to 7,000 feet, nine per cent from 7,000 to 8,000 feet and seven per cent over 8,000 feet. This leaves thirty per cent at the low altitude of from 2,000 to 3,000 feet. The prairie portion is embraced in Valley, Dawson, Custer, Rosebud, Yellowstone, Carbon, Sweet Grass, Fergus, and Choteau and the larger part of Teton and Cascade counties. The other counties of the state are mountainous, though there are broad valleys and basins between the mountains, aggregating

THE MATTERHORN, 9,500 FEET HIGH, FLATHEAD COUNTY, MONTANA.

thousands of square miles of good agricultural land, such as the Missoula, Flathead, and other valleys lying between the Main Divide and the Bitter Root and Kootenai ranges of mountains. The extreme southeastern part of Montana has the same characteristics as the bad lands of the Dakotas, being an abrupt, broken, and waterless country.

The main range of the Rocky Mountains extends northwest and southeast throughout the state, and from the snow capped peaks flow the great network of rivers which water the entire state. The general elevation of the range at the

crest is given as 6,500 feet, but there are twenty-two mountain peaks with elevations exceeding 10,000 feet, and six of these have altitudes greater than 11,000 feet, the highest being Mount Douglas, 11,300 feet. Some of these are covered with snow throughout the year. Besides the main range there are the Belts, the Highwood, Bear Paw, Crazy, Little Rocky, and Big Snowy mountains to the east, and the Bitter Root, Coeur d'Alene, Kootenai, and Cabinet mountains to the west.

The two largest and most prominent rivers of the state are the Missouri and the Yellowstone, the former being the union of the Jefferson, Madison, and Gallatin rivers at Three Forks, in Gallatin County, one of the most southerly counties of the state. After an erratic course this river reaches Choteau, one of the most northerly counties, and then zigzags its way to the eastern boundary of the state, joining with the Milk River in Valley County and the Yellowstone at the boundary, and then proceeds on its way to the Mississippi. The Clark's Fork of the Columbia, or Missoula River, rises on the west side of the Main Divide, runs mainly through Missoula County on its northwest course to Lake Pend d'Oreille and the Pacific waters. In Flathead County, in the extreme northwest part of the state, simply an elbow or bend of the scenic Kootenai is made in this state, as it comes in from the north and passes into Idaho on the west on the same errand as the Missoula. These rivers are all swift running, have steep bluffs, or flow between canyon walls, and create many falls and cascades. The Great Falls of the Missouri, the highest being approximately 100 feet, in Cascade County, and those of the Clark's Fork, are the most notable.

A narrow strip of the Yellowstone National Park, elsewhere described, extends across the boundary line into Park and Gallatin counties, Montana.

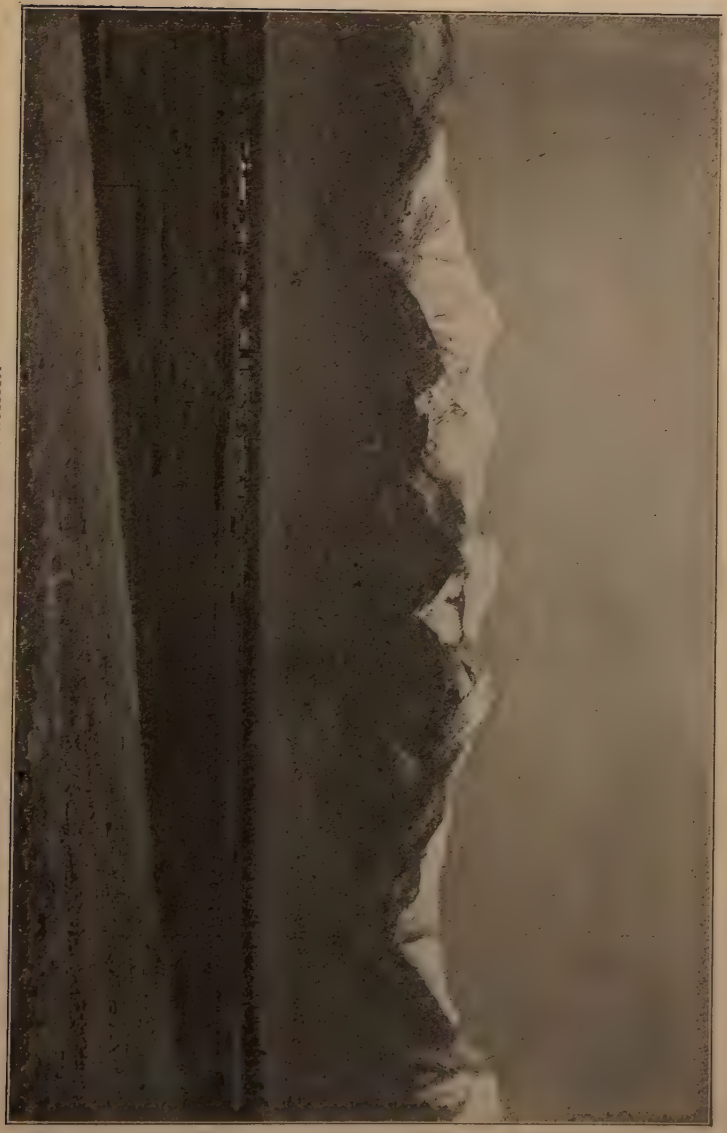
The Milk River, a very prominent river of the northern part of the state, rises in Teton County, flows northeastward into Canada, and returns to Montana again in Choteau County, where it enters the Missouri. Between the Rocky Mountains on the east and the Bitter Root and other mountains on the west lies a great basin, 250 miles long, and averaging about seventy-five miles in width, which has a marked physical difference from the eastern or larger portion of the state. In climatic and agricultural possibilities it is the most favored region of the state. Timber and water are in abundance, the rainfall in most parts is sufficient, and the cli-

A FOUR-DECK ELEVATOR.

mate is very moderate. This western region of the state is subdivided into smaller valleys; in the extreme northwest is a basin drained by the Kootenai River; south of this lies a region tributary to the Missoula River; then that of the Bitter Root, or St. Mary's River. Though Montana is not a state of lakes, it has many, of which Flathead is the most prominent. It is twenty-seven miles long, has a width of twelve miles, and lies in the famous Flathead country, surrounded by rich agricultural lands. The lake and river of the same name are navigable.

CLIMATE.—Montana is a region having a very dry and bracing atmosphere. The winters are long, and though not continually cold, the thermometer, when in sympathy with the Canadian cold waves, indicates a very low temperature. These cold wave periods are infrequent and of short duration. The prevailing wind is from the southwest, is known as the Chinook wind, from the Pacific, and this moderates the weather and melts the snow, which is usually light outside of the mountainous regions. Cattle and sheep are thus allowed to graze upon the ranges usually throughout the winter without extra feed. There are, however, severe winters at times, for which preparation must be made. Such a winter came in 1880-7, when more than one-half of the stock died from lack of feed and exposure, and the winter of 1902-3 was unusually severe. Loss of stock is easily prevented, and no stockman now is without at least six weeks' feed. The cold weather is not severely felt in Montana, however, owing to the small percentage of humidity during these months. The blizzard in its good old-day form is not known except in the extreme eastern part of the state. Vast herds of cattle and flocks of sheep are continuously feeding throughout the winter on the buffalo grass, a native grass which cures itself upon the ground, retaining its nutritious qualities, though sere and yellow. This grass is cured by the sun and the wind before the frost comes in the fall, thus retaining its juices. This wonderful grass, the dry air, the light snowfall, which is soon dissipated by the Chinook winds, and the short duration of the excessive cold weather is the secret of the Montana stockman's success, and is not generally understood by those who live in a more humid atmosphere, where the same conditions do not obtain.

The summer is comparatively short and warm, crops growing quickly. The heated air is, however, cooled by the moun-



MISSION RANGE, MISSOULA COUNTY, MONTANA.

tain breezes at night, so that the climate is very pleasant. The mean annual temperature, at the eastern base of the Rocky Mountains, is from 40° to 50°; the rainfall is from ten inches in the extreme eastern section to twenty-five inches in the mountain valleys.

IRRIGATION.—Although there are large areas in those counties designated as prairie counties that may be rated as semi-arid, there are thousands of square miles which receive abundant precipitation, particularly in Cascade, Gallatin, Teton, Fergus, and Sweet Grass counties. Most of these lands border on the foothills of the mountain ranges. The other agricultural lands, with the exception of those in the river bottoms, require irrigation, but when placed under water yield in abundance. Approximately forty per cent of the tilled lands of the state are now producing without the aid of artificial watering. Much of Missoula, Ravalli, Beaver Head, Madison, Deer Lodge, Meagher, Cascade, Fergus, Gallatin, and Sweet Grass counties afford opportunities to locate on agricultural lands that can be profitably tilled without the aid of irrigation. There are millions of acres that must be watered, and the drawback in this direction has been the lack of facilities to bring the water in sufficient quantity. Canals on a large scale have been very expensive; in consequence, as an inducement to the reclamation and settlement of the arid lands, Congress passed the Carey desert land act, giving the different states titles to lands when the state shall have reclaimed them. Montana took advantage of this act, created an irrigation commission and authorized it to issue bonds for the accomplishing of the work, and in this way considerable progress was made.

Since the enactment of the Carey law much interest has been aroused in the question of irrigation throughout the entire west, and a movement was subsequently started to induce the United States government to build reservoirs and to construct public canals. The government then set aside large forest reserves along the mountain ranges of the arid states, for the double purpose of preventing their early denudation and retaining the timber as a source of moisture, especially in holding the snows. A bill was passed and signed by the President, during the month of June, 1902, which created a reclamation fund from the sale of public lands in Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma,

Oregon, South Dakota, Utah, Washington, and Wyoming. This reclamation fund, with some reductions, is to be used for the construction and maintenance of irrigation work in the states and territories enumerated. This will no doubt solve the question satisfactorily, so that lands which are not under private canals, or the co-operative sytem of the Carey act, will be irrigated by the national government. (For the Carey act in full, see addenda.)

A number of canals have been built in this state and are now distributing water with success. Among the more prominent are the Crowe Butte, or Sun River Canal, which is more

A HERD OF MONTANA CATTLE.

than 100 miles in length; the Minnesota & Montana Land Improvement Canal, at Billings, thirty miles in length; the Dearborn, a co-operative canal under the Carey act, in Lewis and Clark county; the Belknap Canal, in the Milk River Valley, Choteau County; the Hinsdale Co-operative Canal, in Valley County; several canals in Cascade County; the Miles City, or Tongue River Canal, in Custer County, twenty-nine miles long; the Manhattan Canal and the West Gallatin Canal, in Gallatin County; the canals in Bitter Root Valley and Ravalli County; and the Conrad Investment Company Canal, in Teton County. Particular attention has been drawn to the northwest part of Montana by the Secretary of State

in his annual report, which approved of what is known as the St. Mary's Lake Diversion Canal, which will turn the waters of St. Mary's River into the Milk River, thereby furnishing a greater supply of water with which to irrigate the remaining unirrigated land in that great valley. It is be-

OBSIDIAN (NATURAL GLASS) CLIFF.

lieved that the very first work undertaken by the government will be a low line canal along the Milk River Valley, as forty-one townships have been withdrawn from settlement in the neighborhood of Havre. According to the provisions of the new irrigation bill, the reclaimed land can only be secured under the homestead act, and will be subject to the actual cost of irrigation after construction. When the cost has been de-

termined, a charge will be made against the land, which will be payable in ten annual payments, without interest. Assuming that the cost of reclaiming the land under this low line will be from $10 to $15 an acre, the cost per year to the homesteader will be $1 or $1.50 an acre per year for the ten years. This can all be paid in one payment if so desired. Only 160 acres of land can be entered, and those already owning land can purchase water for 160 acres and will be charged the same price as if they located the land. Homesteads may be taken in lands withdrawn from market before

DAM AND ELECTRIC POWER PLANT ON THE MISSOURI.

the ditches are built, the idea being to encourage those who will go upon and improve the land.

The cost, in co-operative ditches, per acre, is of course gauged by the expense, and many small diverting ditches are made by individuals, where their lands lie along streams of considerable fall, with practically no expense at all. Lands under private ditches cover a wide range of price. Those devoted exclusively to horticulture, for instance, in the neighborhood of Missoula, are held at from $150 to $200 per acre, while lands in the eastern part of the state susceptible of producing the cereals, hay, alfalfa, etc., range from $15 up.

The following table of average values of irrigated and unirrigated lands in the various counties of the state and the

cost of the water rights and maintenance of canals is from the Twelfth United States Census Report:

AVERAGE VALUE PER ACRE OF IRRIGATED AND UNIRRIGATED FARMS AND IRRIGATED LAND, JUNE 1, 1900, WITH AVERAGE COST PER ACRE OF WATER RIGHT AND MAINTENANCE.

COUNTIES	AVERAGE VALUE PER ACRE, EXCLUSIVE OF BUILDINGS				AVERAGE COST FOR WATER PER ACRE	
	All Farms	Unirrigated Farms	Irrigated Farms	Irrigated Land	Water Right	Annual Maintenance
The State (a)	$5.45	$3.71	$6.19	$19.66	$3.12	$0.28
Beaver Head	7.48	3.38	7.69	13.24	2.01	0.20
Broadwater	8.94	5.43	9.27	16.74	4.49	0.16
Carbon	10.06	3.20	11.38	19.69	3.61	0.26
Cascade	4.83	4.09	5.87	15.04	1.41	0.31
Choteau	4.30	2.25	5.47	13.88	1.87	0.27
Custer	2.98	2.32	4.35	29.47	9.13	0.79
Dawson	2.20	2.04	3.06	12.19	7.19	0.39
Deer Lodge	7.04	4.79	7.19	20.48	3.85	0.23
Fergus	4.58	2.16	4.91	12.70	1.60	0.21
Flathead	11.02	11.58	8.20	32.46	7.70	0.52
Gallatin	12.50	10.74	.04	31.22	5.88	0.13
Granite	9.40	5.20	9.75	14.99	5.84	0.27
Jefferson	9.74	2.59	10.16	22.31	3.91	0.14
Lewis and Clarke	5.43	5.26	5.48	14.00	1.30	0.20
Madison	7.95	6.18	8.09	17.70	4.48	0.23
Meagher	2.78	1.25	2.82	12.49	2.61	0.14
Missoula	11.26	8.46	12.73	55.91	7.80	0.33
Park	5.45	4.73	5.54	15.73	3.57	0.33
Ravalli	16.26	6.44	17.17	37.46	5.92	0.12
Silver Bow	9.09	5.54	9.58	23.77	4.32	0.17
Sweet Grass	3.68	2.32	3.84	21.31	3.32	0.68
Teton	4.88	4.22	5.33	14.82	1.03	0.32
Valley	3.68	3.52	3.91	18.47	2.80	0.15
Yellowstone	1.91	1.37	2.34	32.15	5.52	0.49

(a) Exclusive of Indian reservations.

It is probably a fair, conservative estimate to place one-fourth of the lands of the entire state as being susceptible of irrigation, and that the average value of all the arable lands in Montana is $2.50 per acre, and it is considered conservative to place the value of the same land after water has been put upon it at from $50 to $70 per acre. This is based upon experiences in irrigation in California, Colorado, and other arid regions.

IN THE STOPE.

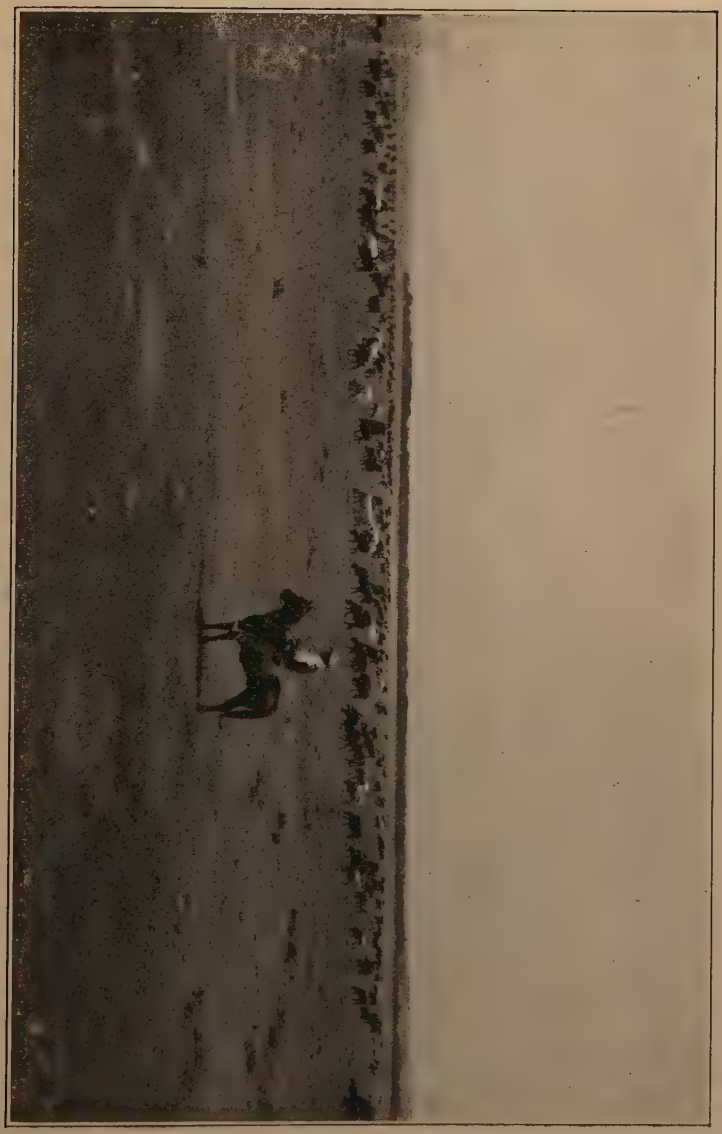
AN UNTIMBERED DRIFT.

Resources.—Mining at present is pre-eminently Montana's foremost industry and most valuable source of wealth. In the early stages, when the placers in the gulches were worked by the adventurous seekers after the yellow metal, gold was enthroned as king. At a later date, when almost pure silver was found and the metal given a coin value, silver succeeded gold upon the throne. But to-day, beyond any doubt, copper has cast these metals both aside and donned the crown, for Montana to-day produces as much copper as all the other states in the Union combined, and one-fourth of the product of the entire world.

Copper was first discovered near Butte in 1864. The growth of the mining of that metal was slow, owing to the difficulty in smelting it, but the output of mines in the state to-day aggregates a yearly value of $37,000,000; the value of silver throughout the state is $20,000,000; gold, $5,000,000; coal, $1,500,000; and lead, $1,000,000. From 1865 to 1898 the value of Montana's mineral output was $217,000,000 in gold; $273,000,000 in silver; and $217,000,000 in copper; and it is stated on good authority that not one-half of one per cent of the mineral acreage containing valuable deposits is at present being worked. Certainly mineral development is yet in its infancy. In addition to the mineral deposits, quite extensive ruby and sapphire beds have been discovered in the western part of Fergus County, and there have lately been reports of the discovery of diamond fields. As it is, the mines have fairly given Montana the title she now claims of the Bonanza State, for there are more bonanza kings in Montana probably than in any country on earth. The Dalys and Clarks of Butte, though having taken out a half billion dollars from the mines of that city, are not the only men in Montana who affix seven and eight figures to the estimate of their wealth.

The production of gold, silver, copper, and lead for the year 1901 is given officially as $60,387,619.01, to say nothing about coal, which plays a very prominent part. These metals are comparatively well distributed throughout the different counties, every one in the state, with but few exceptions, contributing to the wealth.

Stock.—In consequence of the semi-arid condition of the land and sparseness of settlement, stockraising has been the principal pursuit after mining. Very little land has been under fence, and the foothills and high ranges will probably never be anything but free range or pasture for stock. The



HERDING CATTLE IN MONTANA.

far-famed buffalo grass covers these plains, and all hay grasses grow luxuriantly. Stock has been allowed to almost take care of itself, so the business has become very extended. Cattle and sheep have lately brought very good prices, and in consequence the business is prosperous. It is estimated that there are now grazing in the state 200,000 head of horses, 800,000 cattle, and 3,000,000 sheep; that the total value of live stock on farms and ranges, June 1, 1900, was $52,161,833, of which forty-five per cent represented the value of the meat cattle, exclusive of dairy cows, 34.8 per cent sheep, 14.9 per cent horses, and 3.6 per cent dairy cows. Calves are valued at $11.89; steers, one and under two years old, $21.17; two and under three years old, $29.81; three and over, $39.90; horses, $26.84; lambs, $1.95; sheep (ewes), $3.37; and sheep (rams and wethers), $3.49. The average value of horses is low because the Indian ponies of the Indian reservation are included. These ponies number thousands, and are valued at only from $3 to $10 per head.

The largest cattle herds are in the northern part of the state, but the greater flocks of sheep are tributary to Billings, Great Falls, and Fort Benton, the three great wool markets of the state and of the United States. The shipments of cattle from Montana to Chicago reached the enormous number of 430,500 head in 1895. The prices of range cattle in the Chicago market have varied from $4.50 per hundredweight to $6 per hundredweight on the hoof, and in 1902, at the height of the market, a few lots brought above seven cents a pound. Lambs of good cross, fed on alfalfa, have brought as high as $6 per hundredweight. The feeding of sheep is becoming quite general in the valleys, where irrigation admits of the raising of alfalfa. The Yellowstone Valley has become famous for alfalfa, the Gallatin for alsike clover, the Bitter Root and Flathead valleys for red clover, and the Milk River and other nothern valleys for alfalfa. In these irrigated districts sheep breeding and feeding will become a very important industry. Lately there has been quite a movement of southern cattle to Montana for ranging. In 1901 the cattle came largely from Kansas City and Omaha to the northwest, while in 1902 they came mainly from Texas and Arizona, Texas alone shipping 99,408.

Within the past few years considerable attention has been given to the raising of Angora goats, and the business has been a success. The Angora goat has been kept principally

for its long, valuable mohair, but its skin is also valuable, as well as its flesh and tallow. And further, the goat is a great dairy animal, in Switzerland the finest cheese being made

ELK.

from its milk. The Montana climate seems to be particularly adapted to the goat's liking, and the foothills and benches furnish him a natural home. The profits made from some of the herds and the estimate of profits on a nine-year basis are very attractive.

GAME.—There is a great variety of wild animals in this state. The moose and Rocky Mountain goat are the most rare. Several species of deer, antelope, elk, and mountain sheep are met with in considerable numbers. Bear, lynx, the mountain lion or panther, wildcat, and wolf abound. Some caribou are found in season, and ducks are plentiful.

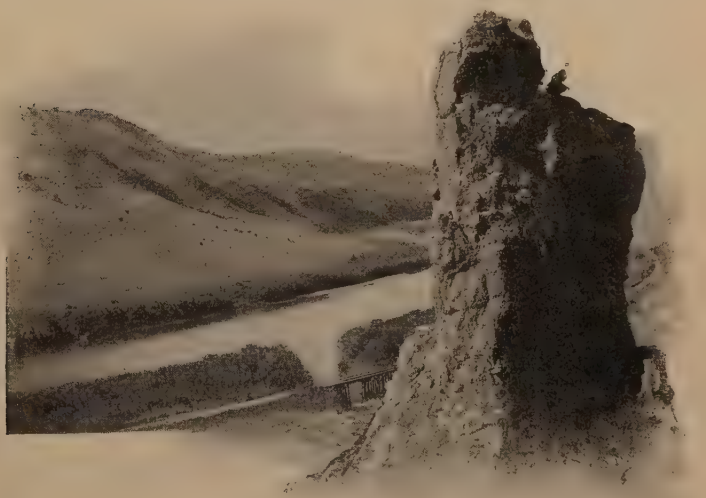
TIMBER.—There are over 12,000,000 acres of timber lands in the state, not counting the smaller bodies that fringe the streams. The estimate of this standing timber is 550,000,000 feet. The timber of merchantable value is largely in the mountainous districts. It would appear that nature appreciated the necessity of having an abundance of timber for mining operations, and placed it near the points of consumption. Aside from the valleys, all the counties lying along the Rocky Mountains and west of the ranges are heavily timbered. A large share of this land near the crest of the ranges has been set aside by the government in the forest reserve. There is a large body of timber along the Kootenai, in Flathead County, in Missoula County and Ravalli County, at many of which places the manufacturing of lumber is carried on very extensively. The largest of these lumber mills is on Flathead Lake, in Flathead County.

RAILROADS.—Two railroads traverse the state from east to west—the Great Northern and the Northern Pacific. The Chicago, Burlington & Quincy connects with the Northern Pacific at Billings. The Oregon Short Line, a branch of the Union Pacific, reaches Butte. The Montana Central leaves the Great Northern at Havre and traverses the state along the Missouri Valley to Helena and from thence over the mountains to Butte. The Great Falls & Canada leaves the Montana Central at Great Falls and runs northward into Canada. The two lines of the Northern Pacific separate at Logan and join again at Garrison, thus giving Helena, Butte, and Anaconda a through line. All these roads, with various branch lines, give good outlets to all points of the compass. The Montana Railroad connects with the Northern Pacific at Painted Rock.

COUNTIES.

VALLEY COUNTY.—This is the most northeasterly county of the state. Its area is 13,486 square miles, and its population by the 1900 census is 4,355. Although some farming is done

in this county, the principal industry has been stockraising, which will undoubtedly continue in the extreme northeastern and northern parts of the county, on account of its semi-arid condition. The Milk River flows eastward through the central westward part of the county, joining the Missouri not far east of Glasgow. Its valley is capable of sustaining a large population, as it is estimated that 300 square miles of land can be successfully irrigated. The rolling plains make good grazing, so that combined farming, with stockraising and



ALONG THE MISSOURI RIVER.

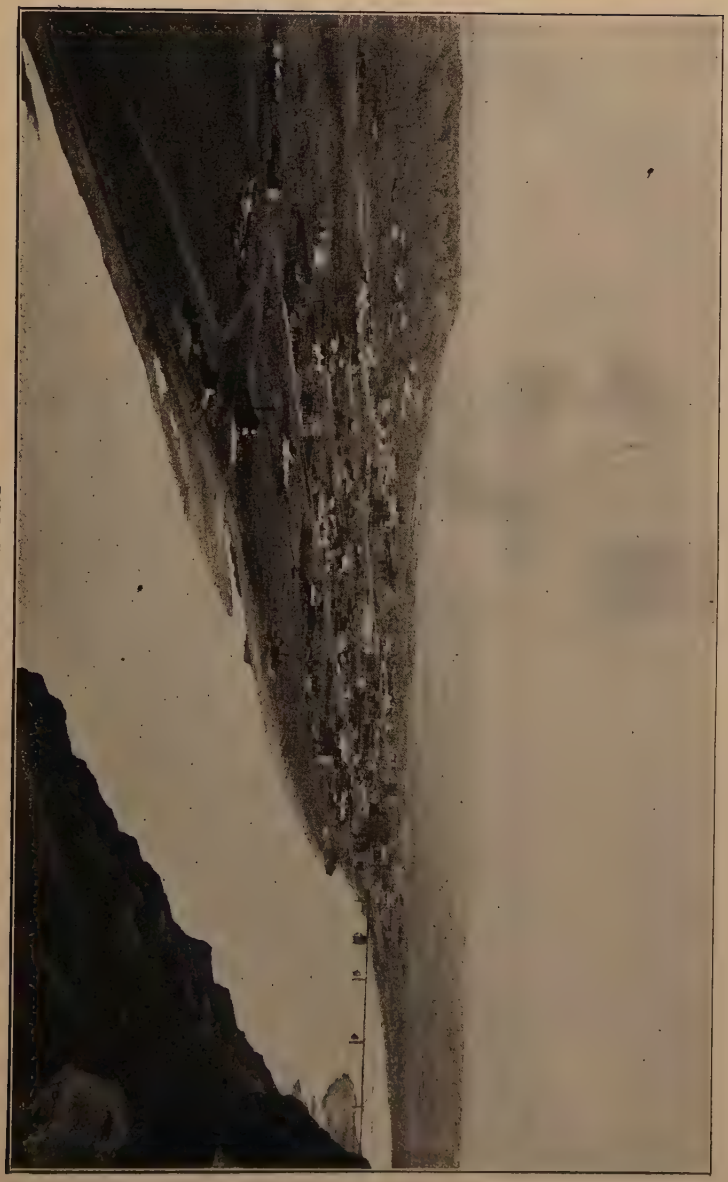
feeding, can be carried on with great profit. The climate is somewhat rigorous but healthy. The soil of the valleys, as throughout most of Montana, is a loam which will produce abundantly. There is still some vacant land left, which can be taken under the different acts.

The Great Northern Railway traverses the county from east to west. Glasgow, the county seat, is the largest town in the county and the end of the freight division on this railroad. It is located on the Milk River, has hotels, railway shops, churches and generally good buildings. The surrounding country is fast settling up.

Hinsdale, a station farther west on the Great Northern, is also on the Milk River, at the mouth of Rock Creek, one of the best streams of the county. At this point an irrigating ditch has been completed, and a good many substantial farmers and stockmen have settled there.

Malta, on the Great Northern Railway and the Milk River, near the western line of the county, is the second largest business town in the county. This town ships to Chicago on an average per year 20,000 range beef cattle; the same of mutton and sheep, and approximately 1,000,000 pounds of wool. To show the extent of some sheep interests it may be stated that 175,000 sheep were shorn at two plants near this place in 1900. There are other stock shipping and supply places in the county of less size.

Choteau County is one of the largest in the state, having an area of 14,835 square miles and a population of 10,966. Topographically the county is composed of rolling prairies and valleys, with the Bear Paw Mountains rising near the center, and the Sweet Grass hills in the northwest, the Little Rocky in the southeast, and the Highwood Mountains in the extreme south. This county is well watered by the numerous streams which flow through it. The principal river is the Missouri, the others the Marias, Milk, and Teton. There are wide and fertile valleys along the streams, suitable for irrigation. The soil varies, being a sandy loam in the uplands and a clay soil in the bottoms. Irrigation is necessary to the cultivation of the land, which produces abundantly; so far little water has been diverted from the river, but the opportunity presented to the settler is great, for there is almost a surety of the government directing the waters of the St. Mary's River into the Milk River, and building a ditch which will irrigate the lands now withdrawn from market. The Milk River rises in the Rocky Mountains, runs into Canada, returns again to Montana and this county, and then runs westward into Valley County before joining the Misouri. This valley comprises a strip 100 miles wide in the United States and 300 miles long. In this vast territory but a small area has been irrigated. The settlers on the irrigated portions are very prosperous. Their canals have been built by co-operative efforts and have proven economical and satisfactory. The remainder of the valley is unoccupied. On the co-operative plan it costs about $3 per acre to put the water on the land, which can be paid for from the crop the first year. In co-operative



FORT BENTON, MONTANA.

canals $2 per acre of this can be worked out at the rate of $4 per day for man and team, so it can be seen that in this locality it is not as expensive as where water is brought eighty to one hundred miles through rock tunnels and flumes. The valley is comparatively low in altitude, so that vegetables thrive as well as the grains and grasses. Alfalfa, or lucern, the most valuable of all forage plants, grows well. This plant yields large crops when it does well, and in some parts of the Northwest several crops are cut in one season. It has a particular value in fattening cattle, sheep, and hogs, producing flesh equal to grain at much less cost. Much gold and silver is found in the mountains. Thousands of horses, cattle, and sheep are feeding on the ranges along the highlands of this river. The colts have no care, and are allowed to run until four years old, when they are broken. If wanted, they may be found 200 miles from the point where they were branded.

Fort Benton is the county seat, located on the Montana Central Railway. This was at one time the head of navigation of the Missouri, and the great distributing point of Montana. To-day it is a great wool market. It has schools, churches, and municipal water-works.

Havre is the junction of the Great Northern main line and the Montana Central, has railway shops, hotels, stores, and is a live and growing town.

Chinook is the center of the great sheep country, has an irrigation canal, and does considerable business.

Fort Assinniboine, the largest military post in the west, located at the foot of Bear Paw Mountain, is garrisoned by colored troops. This point is usually rated as the coldest place in the United States.

Teton County lies west of Choteau and has an area of 7,900 square miles. Except in the western portion, which occupies the eastern slope of the Rocky Mountains, it is prairie range and agricultural lands. The Blackfeet Indian Reservation covers about one-fourth of the county. Copper has been found in paying quantities in the mountains, and the locality bids fair to become a great camp.

The county is estimated to contain 150 square miles of tillable land, which has not yet been irrigated, the balance being mountainous and grazing lands. This county is the seat of the Conrad Investment Company Canal, which takes water from the Dupuyer River, or upper branch of the Marias, and reclaims 40,000 acres of land. A large part of this has been

sold to settlers, but there is still some left unsold. Other ditches are being built and a new co-operative company is being organized on the Sun River, so that the opening for settlers in this county is very good. The price of lands, with water, is $15 per acre up. Hay, oats, and barley are considered the best paying crops, for which there is an ample market at Great Falls. The Great Northern Railway crosses the nothern part of the county from east to west, and a branch of the Great Northern, the Great Falls & Canada Railway, passes through the eastern part of the county from north to south, and crosses the main line at Shelby Junction. The elevation of Summit, the crossing over the Main Divide of the Rocky Mountains, is 5,202 feet.

Choteau, the county seat, is a thriving inland town, on a branch of the Teton River. The Blackfeet Indian Reservation extends from the Canadian line sixty miles to the south and forty miles east and west. There are about 2,000 Indians on the reservation, living on ranches along the streams. They raise many cattle for the Chicago market.

Chief Mountain, 10,800 feet in height, is the sentinel of the Main Divide at this point, and not far distant to the east are St. Marys lakes, which the government is considering turning into the Milk River. From their scenery these lakes are called the Geneva of America. They are respectively seven and eleven miles in length; the sides are very abrupt, rising to a considerable height, and are covered with glaciers, from which the water supply is maintained. The hunter will find elk and Rocky Mountain sheep, and trout fishing in this particular locality is good.

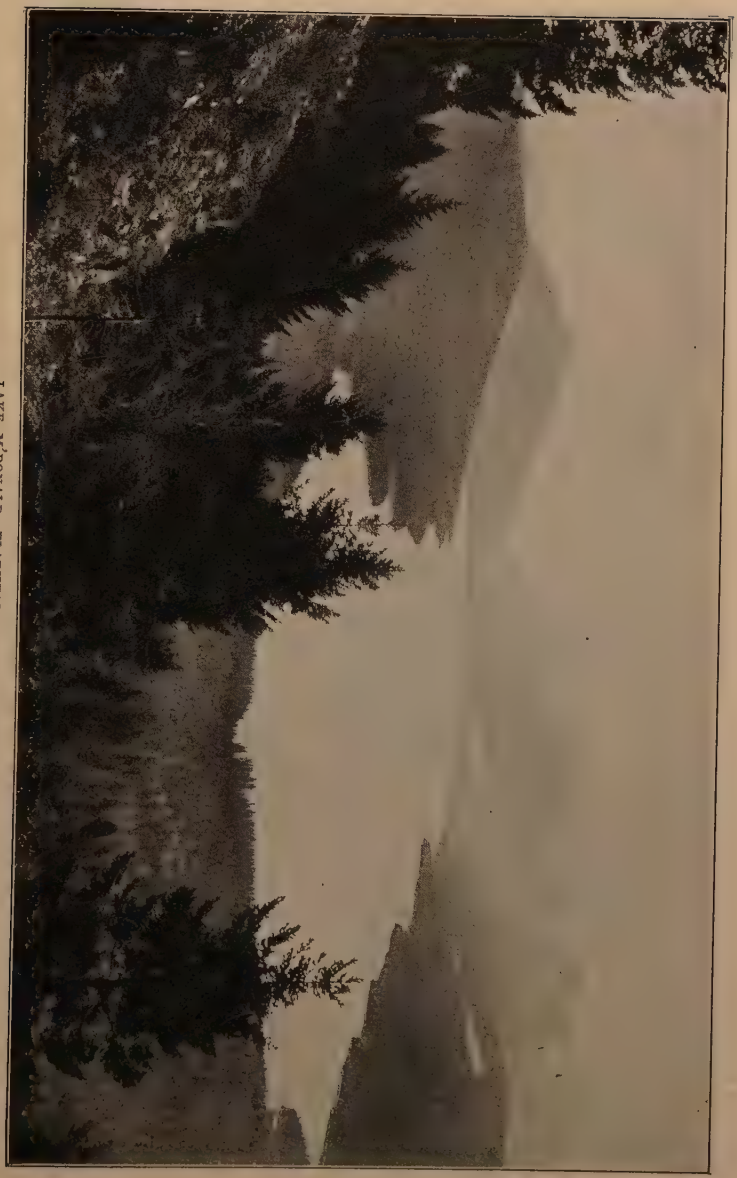
Flathead County lies in the extreme northwesterly part of the state and west of the Rocky Mountains, having an area of 8,700 square miles and a population of 9,375. About one-seventh of the county has been surveyed and appropriated, and there are about 4,000,000 acres left unsurveyed. A large portion of the county is of a hilly and mountainous nature, besides being covered with dense forests of pine, fir, and tamarac principally, and the hidden depths teem with the precious metals. The county contains several fertile valleys, the agricultural possibilities of which are marvelous.

The Flathead Valley proper is thirty-five miles in length, with an average width of eighteen miles, and its altitude is about 3,000 feet. The Chinook winds from the Pacific reach this valley with their soothing influences, while the Canadian

winds are warded off by the Main Divide of the Rocky Mountains. This makes a very moderate climate and precipitates an abundance of moisture. With an extremely rich soil, created by the wash of the mountains for ages, all classes of crops can be raised. This basin, lying, as it does, between the Cabinet Mountains on the west, the Purcell Range on the northwest, and the Main Divide on the east, is climatically a part of the Pacific Northwest, and is of the same character as the more southerly end of the great basin known as the Bitter Root and Missoula valleys.

There are three classes of agricultural land in this valley—the bench lands, which are sandy, with gravel and clay subsoil; the lower bench lands, having a sandy loam, with clay sub-soil; and the bottom lands, having a black loam of mold, with a clay sub-soil. The very best of hard wheat, equal to that raised in the Red River Valley, and all the other grains, timothy, clover, root crops, and large and small fruits, are raised. The average yield of wheat is claimed to be thirty-one bushels per acre; oats, sixty-four bushels; rye, thirty bushels; potatoes, 257 bushels; and timothy, two and one-half tons per acre. Root crops grow large and abundantly. The government weather bureau at Kalispell gives the average rainfall at 16.62 inches. Fuel, fencing and lumber, which are great items of expense in prairie countries, are here obtained for the cutting and hauling. Dairy herds, hogs and poultry are a source of profit, as the mining camps offer a steady market.

In the Tobacco Plains country, along the Tobacco River, about ninety miles northwest of Kalispell, there are several townships of rolling, grazing, open timbered lands. The valleys of the Kootenai, Fisher, Libby, and Yakt rivers afford fine meadows, open timbered grazing lands, and some farm lands. This county has a great deal of timber, and twenty sawmills are now located here, turning trees into lumber. The output is estimated at 50,000,000 feet per annum; this is increasing every year. The Great Northern Railway has built a line to the head of Flathead Lake, where is situated the largest sawmill in Montana. Here the three-faced railroad ties are manufactured, which, after being dried, are immersed in a solution at what is commonly called "the tie-pickling plant." These ties are now being placed in the road-bed of the Great Northern Railway, and the claim is made that in this cured condition they will last thirty years in all



LAKE M'DONALD, FLATHEAD COUNTY, MONTANA.

weathers, as against ten years in the natural state. Lately a large lumber plant has been installed on Flathead Lake, with a capacity of 24,000 feet per day.

The various branches of the Flathead River run into the lake from different directions. The Kootenai River crosses the boundary line, flows fifty miles south, then turns, making an elbow, and flows forty miles westward, where it enters Idaho. It has many tributary streams, along which considerable mining is done. The scenery is remarkably beautiful. Great measures of lignite coal lie in the northern part of the county, and adjoining these are the oil fields. In the valley proper the government land has all been taken up, but in the outlying districts there is room for many more settlers. There is a wide territory here, as large as two or three of the eastern states, so there is room for those who are willing to go to the outskirts.

In the winter the thermometer ranges from 10° to 40°, seldom reaching zero, and in summer from 60° to 85°, seldom going to 90°. The scenery is inexpressibly grand, affording the lover of nature the opportunity to revel in its glories. Lake McDonald and Avalanche Basin are easy of access from Belton station. This lake is a jewel and its glacial attractions are not only fine but big game in the vicinity is fairly plentiful. This gorge has been termed by some the "Northern Yosemite," and the term is well merited.

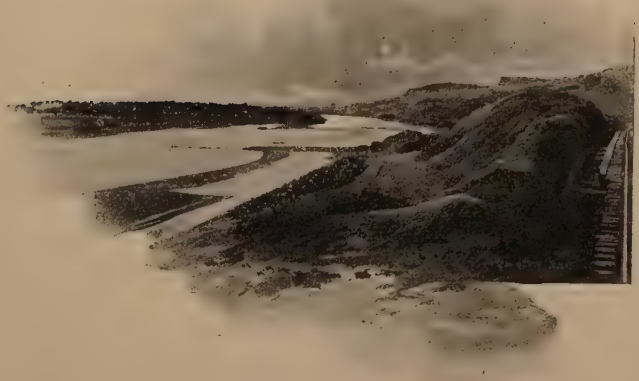
Kalispell, the county seat, is a thriving city of 2,520 inhabitants, situated on Flathead River, five miles north of Flathead Lake. It is the end of a division of the Great Northern Railway, and is well built and organized in every way. It has good hotels, eight churches, graded schools, electric lights, and is quite metropolitan. Other towns in the county are Columbia Falls, the seat of the State Soldiers' Home; Libby, Troy, Sylvanite, Dayton, Holt, and Tobacco.

Dawson County is a large prairie county, lying south of Valley County, in the eastern part of the state, and has an area of 13,194 square miles, with a population of 2,447. The entire country is adapted to and utilized for stockraising. The valleys lie lower than the rest of Montana to the west, and consequently have a higher temperature; they are well watered, and, with irrigation, will produce well. Here combined stockraising and farming is destined to become general in the future. The Great Northern skirts the northern part of the county, and the Northern Pacific comes in from the east,

reaches the Yellowstone River at Glendive, and follows that stream to the southern border.

Glendive, the county seat, a city of 1,200, is very picturesquely situated, and has the Northern Pacific division headquarters, roundhouse, etc. It is a city of pastoral pursuits, but of considerable refinement.

Fergus County.—This county lies directly to the west of Dawson County, is very nearly in the center of the state, has an area of 6,762 square miles, and a population, in 1900, of 6,937. It lies largely between the Musselshell and the Mis-



VALLEY OF YELLOWSTONE RIVER, JUST WEST OF GLENDIVE.

souri rivers; its length north and south is 110 miles, east and west 125 miles. The county has varied resources, with mountains, bench and valley lands, and all the different classes of soils. An eminence rises in the Big Snowy Mountains, from which many clear and swift running streams radiate in all directions. The mountains are producing ores of wonderful richness, and there are many mining properties that will become producers as soon as railway facilities are afforded. An excellent quality of coal is found at various places.

To-day the traveler who visits Lewiston, in the Judith Basin, must travel by stage from Great Falls, 120 miles, or

sixty miles from Harlowton, the end of the Montana Railway. It is believed that this road will be extended at once to Lewiston. On the extreme western border of the county are sapphire mines, the stones of which are said to rival those from the Orient. The sapphires are mined much as is placer gold. Tiffany & Co., of New York, have so far taken the entire product. It is known that the sapphire product of the United States is approximately valued at $400,000, and that the larger portion of this comes from Fergus County.

The first industry in the county was cattle raising, which, however, now is secondary to sheep and wool growing, in which it is claimed this county ranks first in the United States, and that none other closely approaches it in the number of sheep ranged, the number of sheep and pounds of wool sold, and the value of the product. In the spring of 1902 there were 685,408 sheep in this county, and it is said that the increase for that year averaged eighty-five per cent, bringing the total in the fall to upwards of a million. The valuation placed on those assessed in that spring was $1,560,488. The number engaged in this industry is probably 300; one firm owns 38,000 head; another, 29,000; another, 30,000; another, 25,000. One stock grower has 9,000 head of cattle, and the majority of cattle owners have from 4,000 to 8,000 head.

In 1902 there were shorn and shipped to the Great Falls and Billings wool markets 5,000,000 pounds of wool, which sold at an average of about fifteen cents per pound, and brought about $750,000. During the fall months of the same year large sheep sales were of weekly occurrence, and well informed bankers estimate the amount received from such sales to have been $600,000 within four months. These two items bring the revenue from the sheep industry within that year to $1,350,000, nearly every dollar of which, it is claimed, has been reinvested within the county. With the extension of the Montana Railroad to Lewiston there is little doubt of that city being made a wool market, as the wool is of fine quality, and there are large amounts shorn at other points near by. A woolen mill is very much desired at this place, and it certainly should be successful, considering the ample water power obtainable and the amount of raw product to be purchased. The cattle raisers have had their measure of prosperity. The last assessment in the county gave the number of cattle at 48,647 head, valued at $1,120,043. No cattle man knows within hundreds how many cattle he possesses, however, for

the only means is the record of calves branded and beef sold. An estimate of the number of cattle shipped in 1902 is 6,000 head, and at an average price of $50 per head the sales amounted to $300,000. In addition to the shipments, the home market consumes the value of $30,000.

This county has considerable rainfall, so that general crops do well. The oat crop averaged in 1902 sixty-five bushels per acre, and many wheat fields yielded fifty bushels per acre.

A FLOCK OF MONTANA SHEEP.

There is considerable land left in this county; the total acreage of the Judith district in December, 1902, is given as over 8,000,000 acres, of which over 3,000,000 are surveyed and unappropriated, and 3,000,000 unsurveyed and unappropriated.

Lewiston, the county seat, is the largest town in the state, not on a railroad. Its population is 1,200, it has several churches, good hotels, two newspapers, two banks, a free library, high school, water-works, electric light plant, and

flour mills. The combined deposits in the two banks exceed $1,000,000, and there was hauled to the stores by teams 13,000,000 pounds of freight. There are other towns along the stage route, but of smaller size.

This county, lying between the two great railroads, has not received its full quota of emigration, and therefore affords the homeseeker a much better opportunity to acquire public lands than some of the counties bordering the railroads.

Cascade County lies west of Fergus County, has an area of 3,400 square miles, is largely a mineral county, and boasts of a population of 25,777, being the second county in the state. Its surface is made up of mountains, bench lands, and valleys, with soil about the same as in the other prairie counties previously mentioned. The Montana Central Railway runs diagonally northeast and southwest, following the Missouri River through the county. Other principal streams are the Sun, Smith, Belt, and Highwood, all of which reach the Missouri near Great Falls. The altitude of the Missouri River below the lowest falls is 2,800 feet, while the altitude of its highest town is 5,600 feet. From any high point five ranges of mountains can be seen, all more or less heavily timbered with evergreens. These mountains afford clear, short rivers, a cool summer climate, and an ample rainfall on most of the bench lands. The annual rainfall on the table lands between the Missouri River and the base of the Belt Mountains is from eighteen to twenty inches. The United States Weather Bureau gives the rainfall at Great Falls, from April to August, inclusive, for the past five years, at from 6.75 inches to 11.19 inches. The table lands are being farmed very successfully, the average of the wheat crop being estimated at twenty bushels per acre, and it is claimed that when the land is summer fallowed and plowed deep, that the yield is thirty-five bushels and the grade No. 1 hard. A single crop of alfalfa is grown here without irrigation. Horticulture is in an experimental stage. There are good openings in this county for dairying, and a good market for all the products.

The resources of the county consist of the great water power afforded by the Falls of the Missouri, which is of great importance, and coal, iron, and the precious metals, in addition to the agricultural products. The Falls include a series of vertical descents and cascades, aggregating in height 520 feet, which, it is conservatively estimated, will yield 340,000 horse-power at an average low stage of the river. St. An-

B. & M. SMELTER AT BLACK EAGLE FALLS, MONTANA.

thony Falls, at Minneapolis, furnish 35,000 horse-power; Lowell, Mass., 11,000, and Paterson, N. J., only 2,150. These falls are distributed over a distance of ten miles, and are known individualy as the Rainbow, Black Eagle, Crooked, and Colters Falls, together with intervening rapids. Engineers have harnessed Black Eagle Falls without destroying its picturesqueness. Above it on the hillside rises, tier upon tier, the smelter of the Boston & Montana Copper Company; a little farther down are the Rainbow Falls, the most beautiful of all the cataracts. The main falls have a descent of ninety-two feet. One of the most curious sights in this region is the Giant Spring. This is really a river, 200 feet wide and five feet deep, bursting out of the earth, spreading out into a fan-shaped stream and foaming over the rocks. This volume neither increases nor diminishes winter or summer. The power utilized from Black Eagle Falls is used in the treatment of minerals, the making of paper pulp, manufacture of paper, aluminum, plate glass, flour, etc.

Great Falls is now and always has been a city since the railroad was built to its site. It is regularly laid out on the east bank of the river. It has an excellent school system, an advanced park system, a public library, four banks, two excellent newspapers—a morning and evening daily—and several churches. The development of the Falls began about twelve years ago, and there are now employed fully 6,000 men in the various industries. The country from every side is tributary to Great Falls, and the resources are so vast that a great city is assured. It grew from nothing in 1885 to 14,758 in 1900, and to-day probably has a population of 17,000.

Iron ores are closely associated with the coal measures of this county, and it is said that much interest has been elicited lately in these deposits, and there is good reason to believe that Great Falls before long will have an iron and steel plant added to her industries.

Niehart, in the Belt Mountains, is the most prominent silver camp in Montana. Belt, Stockett and Sand Coulee are bituminous coal mining towns, the former being controlled by the Amalgamated Copper Company, where they have a large mining and coking plant, from which they ship coal and coke for use at Anaconda. The output daily is from 100 to 150 tons of coke, and from 1,500 to 2,500 tons of coal.

Lewis and Clark County is a long and comparatively narrow county bordering the east side of the Main Divide of

THE GREAT FALLS OF THE MISSOURI, GREAT FALLS, MONTANA.

the Rocky Mountains. Covering, as it does, the peaks of the range, it is principally mountainous, and in consequence is the most prolific producer of the precious metals in the state. Its production of gold, silver, and lead in 1900 was $1,679,796.89.

The gold-bearing belt, according to the 1900 report of the State Bureau of Agriculture, Labor, and Industry, extends "from its southeastern corner to the south of the city of Helena, and thence in a wide semi-circle through Marysville and Broadwater to the northwest corner of the county. The belt, or 'mother lode,' as it might be called, is several miles in width, and everywhere that systematic development has been undertaken mines of value have resulted." Good paying mines are on every hand, and in the beds and benches of all

THE BEGINNING OF HELENA.

the creeks that flow through the county placer gold has been found in quantity, the annual product of these aggregating a large sum. Several properties are equipped with modern mills and cyanide plants, and the owners are getting rich returns for the capital invested. There is no section of the state which affords the mining investor or the prospector such excellent opportunities, for this county is but little beyond the prospecting stage.

The county is well watered by the Missouri River and other streams running into it from the mountains on the east and west sides. These streams furnish water for irrigating canals and water power for electrical purposes.

The county has a large area of farming land, which is already occupied by a thrifty class of farmers. The northern part of the county is mainly taken up by cattle and sheep

ranches. The agricultural lands can be purchased at a very reasonable figure from those who have large holdings, and good profits may be made from smaller and more intensively cultivated fields.

The Dearborn Canal, the first co-operative irrigating canal built under the Carey act and the State Arid Land Commission, is located in this county, about fifty miles north of Helena. The Dearborn Valley comprises an area of 782 square miles, 75,000 acres of which are irrigable. The canal system comprises 100 miles of main waterway, with several hundred

THE OLD AND THE NEW HELENA.

miles of laterals, and the reservoir system covers about 3,000 acres, at an average depth of twenty feet. The main canal is thirty-eight feet wide and five feet deep, with an average grade of 3.1 feet to the mile. The side canals are from seven to sixteen feet in width. The land along this grand artery is now being sold to actual settlers, not to exceed 160 acres to one person. The state requires that the land be sold for the cost of irrigating it, which cost is limited by law to $12.50 per acre, with twenty per cent additional, which makes the total cost $15 per acre. It is sold for one-tenth cash down and the balance in nine equal annual payments, with interest at six per

cent. The valley soil is a rich, sandy loam, in which the growth of vegetation is luxuriant. Those having limited means and desiring homes can acquire them here, with the assurance of making farming a success from the start. The nearest station to the center of operation is Craig, on the Great Northern Railway. (For United States land laws, Montana state co-operative laws, and the location of land offices throughout the Northwest, see addenda of this book.)

The course of the streams and the trend of the mountains make this county naturally a grand highway from east to west, which route is traversed by the Northern Pacific Railway, the route of the Great Northern Railway being from north to south.

Helena, the county seat and capital of the imperial state of Montana, is located at the junction of the Northern Pacific and the Great Northern railways. Its population was given in 1900 as 10,772, but is in all probability to-day more than 15,000.

A glamor of romance surrounds this golden city, the center of one of the richest mineralized quartz mining sections in the world. Its main street marks the identical spot made famous by the extraction of millions of dollars in placer gold from the gravel of what was known as Last Chance Gulch. A handful of prospectors had wandered from gulch to gulch during the summer of 1864, panning without success, until they finally staked their last chance in this gulch before returning to the south. And lo! the first pan of gravel washed out twenty dollars! Claims were immediately staked, the news rapidly spread, and Helena became a reality. From 200 square feet, on the ground now occupied by the Great Northern depot, the owners took out $330,000, and it is said they did not go down to bedrock. The output of this gulch and those contiguous was $80,000,000. The mines about Helena are richly paying their owners, and a multitude of legitimate opportunities are still awaiting capital and enterprise.

As a place for business Helena offers unusual advantages. Notwithstanding the fact that the city was twice wiped out of existence by fire, in 1869 and again in 1872, and suffered a third time from a disastrous conflagration in 1874, its citizens survived these ordeals, the town was rebuilt on a greatly improved plan, and Main street, formerly the celebrated gulch itself, has become a busy thoroughfare.

Powerful dams have been constructed on the nearby Mis-

souri River, which furnish electric power for manufacturing and mining operations in Helena and vicinity. Although straight manufacturing is in its infancy (there being perhaps 500 men employed in this line), a good many wares are made and sold to different parts of the state. A million dollar custom smelter, which runs to its full capacity on ore from different localities, is located in the center of a prolific dry ore district, and draws its wet ores from the Coeur d'Alene mines. With cheap fuel from the north and east it has every prospect for success. In early times Helena was a distributing center

VIEW OF PLACER ROCK DUMPS IN LAST CHANCE GULCH, IN 1901.

for goods to miners, and to-day it is a railroad and distributing center on much broader lines.

The Broadwater Natatorium, at the Hot Springs, is magnificently appointed, and the surrounding grounds are art landscapes. The bathing pool is 350 feet in length by 150 feet in width, and is supplied with natural hot water at a temperature of 170°, with the cold water necessary to temper it. Fort Harrison, one of the newest and best equipped United States army posts, and the Montana University are located here.

The altitude of Helena is 4,256 feet, and the air is very dry and invigorating. The water supply is the best and the cli-

mate indisputably healthy. The city has many handsome business buildings, attractive residences, the best of hotel accommodations, public institutions, an adequate school system, three metropolitan daily newspapers, electric lights and other municipal improvements, and all the advantages that go to make a modern, up-to-date city.

The state capitol is located in the eastern part of the city on a plat of ground donated to the state. The grounds cover ten acres between Sixth, Lockey, Robert and Montana avenues. The building is in the Grecian Ionic style of architecture, Columbus sandstone being used in its construction. It is 250 feet in length by 130 feet in depth. From the center of the building and crowning the whole rises the dome, which

STREET SCENE IN HELENA.

is covered with copper and crowned by a statue of Liberty. The cost of the capitol and grounds was approximately $530,000.

Powell County lies west of Lewis and Clark County and the Main Divide. This county is also a long, narrow tract, bordering on the mountains, of irregular shape, running in a northerly and southerly direction. In the early days this county was a part of Deer Lodge County, and was noted for its gold placers, which were very numerous and rich, Gold Creek being the first place where gold was discovered. Its area, estimated, is approximately 3,200 square miles. Quite

large tracts of arable lands lie in the big Blackfoot and other valleys. Its elevation being about 4,500 feet, only the hardier crops are raised, but these have a ready sale at the cities of Butte and Anaconda, which are good markets for agricultural products. Therefore these valleys are well settled. There is abundance of water for irrigation purposes. Deer Lodge is the county seat, has a population of 1,324, and is the site of the state penitentiary.

One line of the Northern Pacific Railway crosses the county from east to west, and another line comes up from the south, meeting the main line at Garrison and the Little Blackfoot Valley. These give ample railway transportation in the south-

PIONEER, NEAR WHICH FIRST GOLD WAS DISCOVERED.

ern part of the county. The former passes through the tunnel to the west of Helena after ascending the mountains in a series of long whiplash curves.

Granite County lies west of Powell and Deer Lodge counties. It is a very broken country, with quite large mining interests, to which the people devote themselves in place of farming. Phillipsburg is the county seat, and has a population of 2,000. A branch of the Northern Pacific Railway reaches Phillipsburg from Drummond, which gives railway communication. The pay-roll of the various mining companies in this county is very large.

Missoula County lies south of Flathead County, on the extreme western border of the state, extending to the top of the Bitter Root and Coeur d'Alene mountains. It has an

area of 7,150 square miles and a population of 13,964. The Rattlesnake, Blackfoot, Bitter Root and several minor streams go to make up the Missoula River, or Clark's Fork of the Columbia, which traverses the county its entire length in a northwesterly direction, affording a wide expanse of agricultural lands and a pathway for the Northern Pacific Railroad, as well as a branch line running to Wallace, Idaho. The mountains stand out in bold relief, and the valleys and rivers are picturesque, which make the scenery very romantic. The Flathead Reservation occupies a large and well watered tract of land, partially in this county. Here the first school was

ON THE BITTER ROOT, NEAR MISSOULA.

established by the Catholic Missionary De Smet. This is now the Catholic Mission of St. Ignatius.

While grain, hay, and stockraising are carried on to a considerable extent in these valleys, fruit raising, owing to the moderately tempered climate, is more widely entered into. Peaches, apples, pears, grapes, and prunes are grown successfully. Orcharding in all western Montana has proved a profitable industry, the fruit being large, sound, and finely flavored. In consequence lands have advanced very rapidly in price, and irrigation being required, the private holdings have sold, on irrigation ditches, from $150 to $200 per acre, and set out to trees and cared for for a term of years, $300 per acre. These prices may seem extravagant, but it is claimed

the orchards will often make 100 per cent for the owner in a year after they come into bearing.

There is some very fine stock in this county, notably the Jersey herd of Dr. Mills at Lola, twelve miles south of Missoula. They are registered full bloods of very high grade.

At Bonner is a large sawmill, the lumber business being quite extensive, and there are several other sawmills in the county.

Missoula, the county seat, is located at the mouth of Hell Gate and Rattlesnake rivers. It has a population of 4,329. Surrounding this city are many beautiful views of mountains and valleys, the very beauty spots of earth. The city has elegant brick blocks, with all modern improvements, good hotels,

MISSOULA.

churches, the state university, and an attractiveness found in but few places in the west.

Ravalli County is another of those favored localities occupying a position between the Main Divide and the Bitter Root mountains. It encompasses the Bitter Root Valley, which is considered the very paradise of the state. This valley runs in a northerly and southerly direction a distance of seventy-five miles, and has an average width of about twelve miles. Mountains of great height, with their forests and snows, girdle the green fields and orchards of the valley in such near proximity that the whole seems as one great park. Along the line of the valley hot springs are found in abundance, mingled with a myriad of lakes, cold as ice and clear as crystal, and abounding in trout. In this valley at Hamilton

the late Marcus Daly located his great stock farm, where were bred and reared the best blooded and fastest horses of the United States. Since Mr. Daly's death these thoroughbreds have been sold and the farm is being transformed into one great orchard, which now has 70,000 fruit bearing trees. The magnitude of this farm may be better understood when it is known that its length is sixteen miles, that there are hundreds of miles of drives traversing it, that of this magnificent domain 50,000 acres are under fence, and 22,000 acres under cultivation, making it perhaps the largest actually cultivated farm in the world. Everything is well kept and automatic gates open at every turn. The Daly summer residence, the most beautiful country place in the west to-day, is located here.

Although lumbering is carried on to a large extent and the mineral resources of the mountains are considerable, the reputation of the valley is based upon its scenery and its fruit. The climate is temperate, since the valley is well sheltered, and frequent showers fall during the months of May and June. Where a gravel sub-soil exists only is irrigation required, but the conditions are such that each farmer constructs his own ditch from one of the numerous streams. The reservoir of snow in the near mountains furnishes ample water for all needs. Dairying is very profitable and there is room for many dairies on an extended scale, with the very best of attendant conditions.

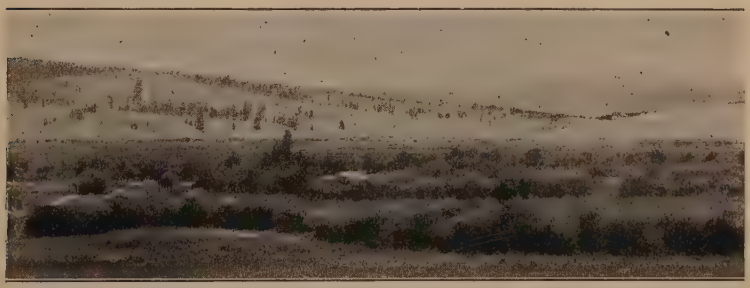
It is estimated that there are 13,500 acres of land in Montana now devoted to fruit raising, and of this 6,000 acres, or nearly one-half, are in the Bitter Root Valley.

Large tracts of timber cover the mountain sides, and the lumber business affords employment to more than 500 men. At Hamilton the Anaconda Copper Company has a very large lumber manufacturing and mercantile business. The city has a population of 2,000, and is quite a summer resort, with an excellent hotel. Stevensville is the oldest town in western Montana, and is known as the site of the first wheat field. St. Mary's Mission, the burial place of Father Ravalli, is in a good state of preservation.

The Bitter Root branch of the Northern Pacific extends from Missoula as far up the valley as Grantsdale, and from there on good mountain roads have been constructed at considerable expense, which gives the entire county good transportation.

Meagher County lies south of Cascade and Fergus counties, has an area of 2,500 square miles and a population of 2,526. This is another one of the great stock producing counties, having a remarkably diversified area, covering the upper valleys of the Smith and Musselshell rivers, between the Big and Little Belt mountains. There is no finer or more productive region in all the state than these valleys, which are well settled, but, like all the west, have room for more.

The mountains carry much mineral and it is confidently expected that this county will not only rival other great mining centers, but produce all the iron needed for use by any extensive steel plant. The Montana Railroad is built to Harlowton, but White Sulphur Springs, the county seat and dis-



ROSS' HOLE.

tributing point for the county, is an inland town, being distant twenty miles by stage from Dorsey.

Broadwater County lies immediately west of Meagher County, has a population of 2,641, and an area of 975 square miles. It covers the valley of the Missouri River from the vicinity of the confluence of its three forks northward to within a few miles of Helena, which is the route traversed by the Northern Pacific Railway. There are several private water ditches in this county, affording ample water for farming purposes, and the lands under these ditches are being sold for from $25 up. There is, however, ample opportunity for more extended irrigation, which can be accomplished under the various modes heretofore explained. The crops of this county are very bountiful and the climate is fairly mild.

Townsend, the county seat, located on the Northern Pacific Railway, has a population of 900. From the town of

Lombard the Montana Central Railway is built up Canyon Creek to Harlowton, as before mentioned.

Jefferson County lies west of Broadwater, has an area of 1,600 square miles and a population of 5,330. The county is very mountainous and the valleys of the Jefferson, Prickly Pear and Boulder are very narrow. Hay, grain and vegetables are raised, and sold in the local market. It is a first class mineral county, and Prickly Pear Gulch was one of the scenes of the early placer diggings. Much of the ores carry zinc and it is expected a smelter will be built to reduce this class of ores, which will add very largely to the production. The prospector or the small farmer will find the conditions of this county offering him excellent openings. Boulder, the county seat, has a population of 2,200, and is located on the Great Northern, which traverses the county between Butte and Helena, and a branch line of the Northern Pacific extends to Elkhorn.

Silver Bow County and Butte.—This county lies just west of the Main Divide of the Rocky Mountains, is the source of the headwaters of Clark's Fork of the Columbia, and is therefore a part of the Oregon country rather than of the Missouri or Mississippi country. Considerable farming is done, but the mining industry is so tremendous as to entirely overshadow every other interest. The extensive copper mines of Butte are the wonder of the age, the mines producing annually in copper, gold and silver upwards of $50,000,000, and in copper alone one-fourth of the output of the world. Farming, railway operations, commercial interests, are all in some way connected with these mines. The Great Northern Railway transports the crude ore from one group of mines at Butte to the smelter at Great Falls and brings in return coal and coke from the Anaconda Company's plant in Cascade County. The Butte, Anaconda & Pacific Railroad transports the crude ore from another group of mines in Butte to the great Washoe smelter and refinery at Anaconda. The Northern Pacific Railroad contributes in various ways to the prosecution of mining and smelting, and now runs its Pacific Coast Limited and St. Louis Burlington Express via Butte, thus dividing with Helena the honors of having a main line. The Union Pacific, over the Oregon Short Line, at one time the only railway outlet, contributes its full share of transportation. The stores, the smaller manufactories, and all the arteries of trade are either adjuncts to,

or in some way connected with, the business of mining, so that nothing can be said about the county which does not include Butte and a history of its mines, for every enterprise centers in that famous hill comprising the towns of Walkerville, Centerville, Meaderville, and Butte, all known to be world as the city of Butte, "The Greatest Copper Camp on Earth."

The United States Census of 1900 gives the population of the county as 47,635, and the population of Butte as 30,470, and since that time the city especially has maintained a rapid growth.

Butte is very cosmopolitan, for it is a great working beehive of people of varied interests and nationalities. It is substantially built, largely upon a hillside, and is very striking in some parts, for business blocks and tailing dumps from the mines are in close proximity. The cultured man here touches shoulders with the miner, and the silk tile and the sombrero walk the streets together, one signalizing the story of financial success, the other the free life of the mountains. The arts of Europe are cultivated in palatial homes, while western manners are assumed upon the street. Money has been made by millions, as it only could have been made in the early days, and it is now being diverted into other and more modernized channels.

The real history of Butte begins with the gold placer diggings of the '50's, when many millions were taken out at Silver Bow, Rocker, and Butte camps; when the toilers of those days lived in tents and brush shanties adjoining their labors. This may be termed the first epoch in its history.

A decline in mining activity began in 1870 and lasted until 1874, when the ores at Butte were found to have a value in silver, and a mode of treatment was discovered. From this time until 1882 gold and silver were the only ores looked for. In 1880 the camp had reached a population of 3,000. During this year the Utah & Northern, a narrow gauge railroad, now the Oregon Short Line, a broad gauge railroad, reached Butte and aided very materially the progress of the city. This may be termed the second epoch.

The third and greatest epoch came in 1882. This year recorded the discovery of the great body of copper ore in the Anaconda mine. Its effect was revolutionary and it was this event which finally established the camp on an enduring basis. Development proceeded on every hand, and each succeeding

strike added fuel to the fire until the fact had developed that the hill was a veritable mountain of copper. The camp was still a great gold and silver producer, but the production of copper increased two hundred and fifty fold in 1883, and

A GENERA

since that year the march of that metal has been in giant strides to its present greatness and enthronement as king.

The estimate of the production of all the mines to the present is $600,000,000 in value, which places this camp second only to that of Johannesburg, in Africa, which has an annual production in gold of $100,000,000.

The assessed valuation of the taxable property in Butte to-day is very close to $70,000,000, so that, taking the 1900 census as a basis, there would be nearly $2,500 to every man, woman and child in the city. Handsome residences have been

HILL.

built during the past few years, an excellent street car system has been established, as well as a perfect sewerage system; and water has also been brought over the mountains at great expense, thus creating sanitary features which are unequalled by any other city in the west. Excellent hotels have taken the place of earlier structures and the best of ac-

commodation is assured to the traveler, while the citizens of Butte will be found to be progressive and hospitable. The Columbia Gardens lie just outside the city and are a very attractive pleasure resort, especially during the summer months. The city boasts of seven public libraries, thirteen newspapers—three of which are dailies and as enterprising as any in the United States—twenty-seven churches, twenty-one public and eight private schools, a State School of Mines, three opera houses, and more than one hundred mines and four smelters in active operation, which annually are producing nearly $60,000,000 and distributing to the laboring population nearly $20,000,000.

"Within an area of 1,000 acres," says Ex-Governor Rickards, "there are being produced, in round numbers, 10,000 tons of ore daily, which, if hauled in one train, would be two and one-half miles in length, and the annual output would load a train 800 miles in length, or one reaching from Chicago to Philadelphia. There are consumed in the smelters of Butte and Anaconda annually 2,000,000 tons of coal; there are used annually in the mines 100,000,000 feet of sawed timber, and 1,500,000,000 feet of sawed lumber, this not taking into account the round timber used for lagging. It has been computed that the sawed lumber would build 75,000 seven-room houses, which would require 540 acres for their sites."

Butte is essentially a dual city—a city above ground, with business streets and a busy population, and a city below ground, from where the blasts are heard, tearing apart its internal structure. Mule cars are wending their way through the tunnels of the lower city; at the same time the electric cars are encircling the city above. The mines have been worked to a depth of 1,800 to 2,200 feet, and the estimate of prominent geologists is made that they will hold out for more than a hundred years.

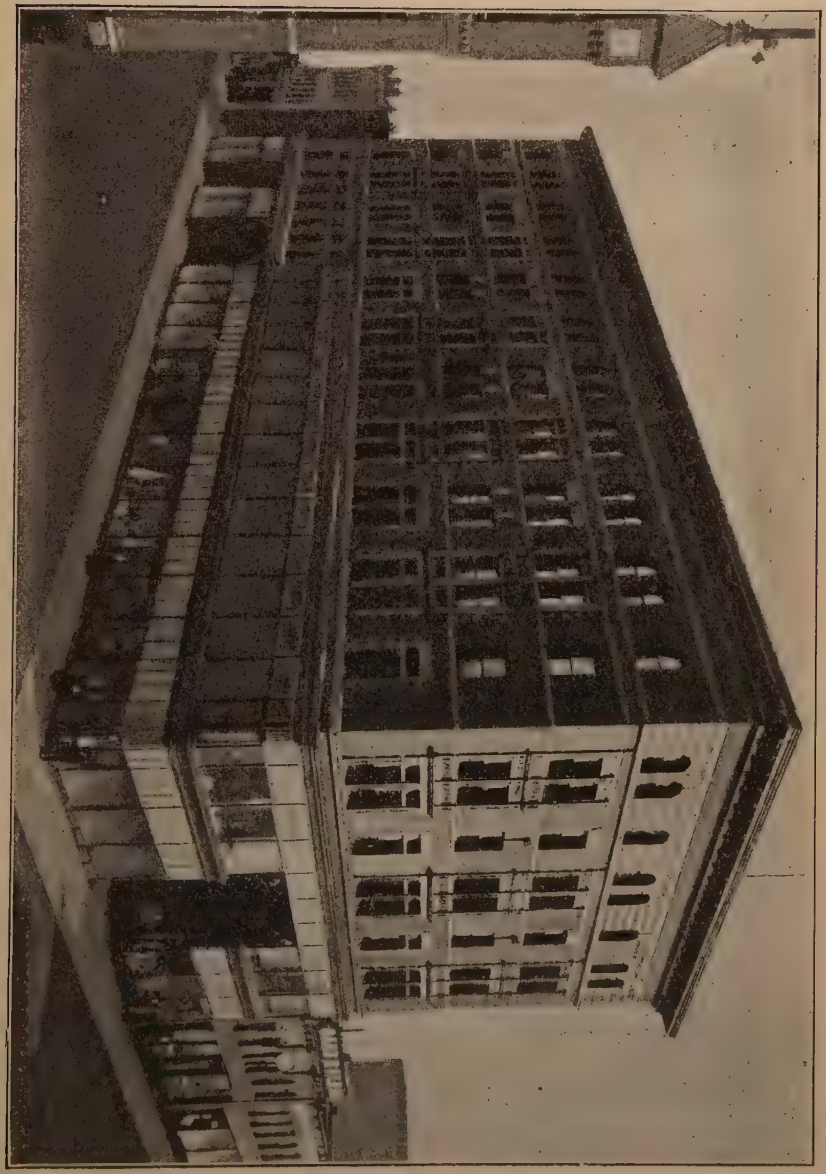
A singular scene meets the eye of every visitor to the city, for verdure, either on lawn or tree, is entirely extinct for a considerable radius, owing entirely to the influence of the sulphurous fumes from the smelters. The elevation of the city, at its most prominent business center, is 5,785 feet, but rises several hundred feet higher to a point at the apex of the hill. This affords a fresh mountain air, which, usually in motion, clears away the smoke, so that the health of the city is remarkably good.

About nine-tenths of the copper producing area in Butte

MAIN STREET, BUTTE, MONTANA.

is covered by the Anaconda Copper Mining Co., the Boston & Montana Co., and the Butte & Boston Co. In each of these the Amalgamated Copper Co. owns the controlling interest. Of the companies just named, the Anaconda is by far the largest. The individual producing mines of the Anaconda group are the Anaconda, Neversweat, St. Lawrence, Bell, Diamond, High Ore, and Mountain Consolidated. The entire production of these mines is transported over the Butte, Anaconda & Pacific Railway to the great Washoe smelter and the refinery at Anaconda, and are there treated. This smelter will be described separately under the head of Deer Lodge County and Anaconda. The Butte & Boston Company has four mines in its group and has its own smelter near the mines. The Boston & Montana group consists of four mines and ships its ore to the smelter at Great Falls for treatment. The Butte Reduction Co., known as Senator Clark's Company, owns and works three mines and operates its own smelter. The Colorado Smelting and Mining Company operates several mines and smelts the ore at the mines. The Montana Ore Purchasing Co., controlled by Fritz August Heinze, ranks third in prominence. The ores are smeltered in Butte and the individual mines are known as the Rarus, Nipper, Cora, and there is one mine the title of which is in dispute. There are several independent properties, and development work is still going on in the outskirts of this rich belt.

Butte is the commercial, industrial and financial center of a great state with rich and manifold resources. Some of the largest mercantile establishments west of Chicago are to be found here, and all commodities are sold at moderate prices. The Hennessy Block, a combined department store and office building, is the most prominent structure in the city. The banking capital of the city runs into the millions, and the Business Mens' Association, which represents all the leading commercial interests of the city, is wide awake and progressive. The mining industry is seen here in its advanced stages, as the most scientific methods are utilized. Electricity and compressed air are employed, the former being brought seventy miles. Modern mining machinery has been installed, and the leading mines are equipped with steel gallows frames of modern type, displacing the obsolete, wooden shaft houses. The mines are well regulated and safely managed, so that accidents are reduced to the minimum.



HENNESSY'S—THE BIGGEST, BEST AND BUSIEST STORE IN BUTTE, MONTANA.

The eight hour system is in vogue, and the average wages are $3.50 per day. The men belong to unions and are thrifty and contented.

Butte is a great, growing, busy city, unique in many respects, a young and lusty giant of the Rockies, well capable of doing battle with any industrial interest throughout the world.

The Amalgamated Copper Company, which owns stock in the principal mines of Butte, now controls approximately two-thirds of the copper mining business of the state. It also controls companies which own great bodies of standing timber, used largely for mining purposes as well as for manufacturing into lumber. It owns foundries, machine shops, brick yards and coal mines in Montana and Wyoming, and the immense new smelting plant at Anaconda, the largest of its kind in existence, besides the smelters at Great Falls and Butte. With but few less than 15,000 employes and a yearly pay roll amounting to nearly $15,000,000, the various companies in which the Amalgamated is interested bear a large part in the business of the state. They produce nearly fifty per cent of the copper output of the United States, and approximately twenty-five per cent of the world's copper, and stand among the principal producers of silver. The Amalgamated interests have been built up with the aid of eastern capital out of the copper business as it previously existed in this state, and every effort is being made to continue the development of these immense resources along the lines instituted by Marcus Daly and other pioneers of the business. There has already resulted therefrom an era of expansion and progress in every direction; the mines are being worked on an enlarged scale; the ore bodies are practically inexhaustible, and the great smelter at Anaconda, which cost more than $6,000,000, is in successful operation, and is unequalled.

There is everywhere confidence in the Butte mines, the highest wages are paid to the workers, and good feeling and co-operation between labor and capital is perhaps as well exhibited there as anywhere in the country on a scale of this magnitude. The farmers, the stock raisers, the business men, in fact, the whole state, derive benefit from the operations of this great company, which operations are being rapidly supplemented by other undertakings. Eastern capital, in conjunction with western enterprise and courage, is com-

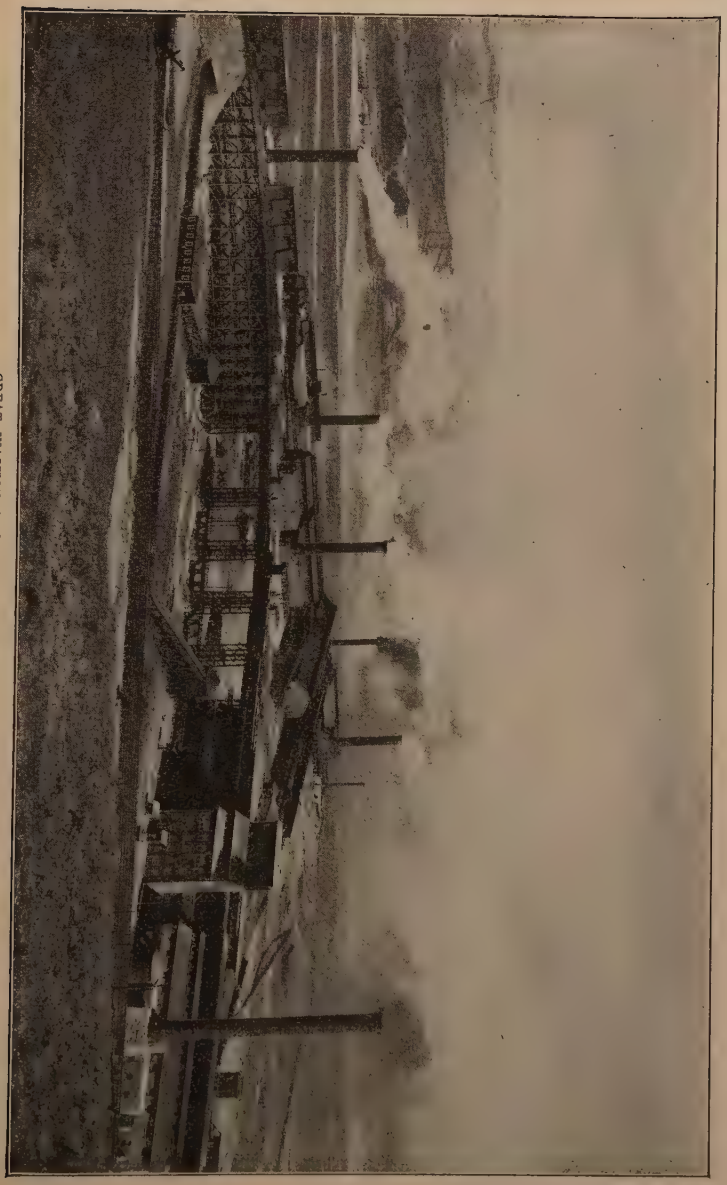
STEEL GALLOWS FRAME FOR MINE HOISTING.

bining not only to open mines, but to build woolen factories, water plants, electric power installations and other institutions for the benefit of advancing civilization. The wonderful development taking place in the state of Montana is an instance of the east and the west working together in harmony, combining intellect and money, not only for profit, but for the benefit of the workmen, who in all the different lines of employment are happily situated. Progress leads liberality by the hand and has not time nor inclination to stop to grind the souls of the poor. To be among the foremost in the advancing army of commerce and industry seems to be the laudable ambition of the Amalgamated Company.

Deer Lodge County and Anaconda.—Deer Lodge County lies west of Silver Bow County, has an estimated population of 13,000, most of which is contained in the city of Anaconda. Farming and stock raising is practiced in the county to a considerable extent, but as in Silver Bow County, these interests are entirely subsidiary to the mining interests, and the county is closely identified with the mines at Butte.

Near the city of Anaconda are located the great Washoe smelter and Anaconda refinery. The accompanying views will give a fair idea of this immense plant, which cost upwards of $6,000,000 and was nearly two years in building. It consists virtually of five separate departments, each occupying its own building. Not only is it the greatest enterprise of its kind in Montana, but it certainly is of all the West, and perhaps of all the world. When the fact is known that 10,000 car loads of material were used in its construction, some idea of its magnitude can be gained. Twenty million feet of lumber were used in the buildings, and 5,000,000 more in the seven miles of flume, constructed from the three lakes at the head of Warm Springs Creek, high up in the mountains, to give the plant a water supply. This flume delivers 50,000 gallons of water a minute, supplying the city of Anaconda as well as the smelter. The site of the smelter covers 300 acres of ground, of which seven acres are covered by the concentrator alone. The works have a capacity for treating 6,000 tons of ore per day, and give employment regularly to 1,500 men. Two immense power houses furnish steam, compressed air and electricity to aid the mechanical operation.

Smelting and Refining Process.—The ore is first sampled in the sampling mill at the concentrator, and is then as-



GREAT WASHOE SMELTER, ANACONDA. REAR VIEW.

sayed to ascertain the exact value of each lot in copper, silver and gold contents. The smelting ore goes direct to the blast furnaces, while the concentrating ore is given to the great concentrator plant, 600 feet long and 400 feet wide, with about 600 jigs, or concentrating machines, the degree of concentration being from forty to fifty per cent. The coarser concentrates go to the blast furnaces, and the finer to the calcining furnaces or roasters. The roasting plant consists of fifty-six great furnaces, which do their work automatically, burning off much of the sulphurous element in the concentrates, to prepare them for the reverberatory furnaces. The concentrating plant is well up on the hill, the roasters are below it and the reverberatories and blast furnaces still farther down, with the converters lowest of all. All the plants are connected by a complete system of tramways, with motors operated by compressed air, and the waste of each plant, the tailings, slag and ashes, is carried down the hill by gravity in launders or flumes, supplied with water from the main flume, brought seven miles to reach a point on the hill above any of the works. Such of the waters passed through the concentrator as may still contain metaliferous values held in suspension, are directed by launders into three large settling ponds, where the suspended matter is gradually precipitated, and after a time the water is drawn off and the mud or slum, as it is technically called, gathered up and made into briquettes, to be treated at the blast furnaces.

When the coarse smelting ore and the coarse concentrates reach the blast furnaces, and the finely concentrated and calcined ore reaches the reverberatories, the smelting process proper may be said to begin. There are fourten reverberatories, each with a daily capacity of producing 175 tons of copper matte, and seven blast furnaces which handle the remainder of the ore treated. In these furnace plants, and in the converting plant, which has nine Bessemer converters, may be witnessed the daily conflict of fire and steam, compressed air and electricity, aided by the genius, experience and labor of man, to reduce the refractory products of nature to his daily needs. The furnaces are charged directly from the tram cars with ore, fluxes and fuel, and every appliance is provided to aid the toilers in their hot work. Still, great care and skill are required in handling hot copper. When a furnace is tapped, the work is strenuous and exciting, and knowledge and courage are both essential. At last the hot

GREAT WASHOE SMELTER, ANACONDA, MONTANA. SIDE VIEW.

metal springs from its confinement and falls into the ladle cars waiting to carry it to the converters. Here, still hot, it is blown, or aerated and refined, to remove the last vestige of sulphur, and then it is poured into great ladles which are caught up by sixty-ton traveling cranes, and emptied into the casting furnaces. These furnaces cast the copper into anode cakes for the electrolytic refinery.

Up to this point the silver and gold of the ores have followed along with the copper. As their value amounts to several millions a year, they must be saved. So the anode cakes are carried by railroad to the refinery, across the Warm Springs Valley, and hung into electrolytic baths in lead-lined tanks having a capacity of 10,000,000 pounds or more of product monthly. This process makes pure cathode copper, and deposits the silver and gold contents of the anode cakes in the form of mud at the bottom of the tank. A simple process of furnace refining makes this mud into bullion bars of standard fineness.

Thus are the commercial products of copper, silver and gold wrested from the refractory sulphide ores of Butte hill in these wonderful works instituted by the courage of modern enterprise. Such works mark the epoch in which we live, and show the progress made in the application of human knowledge—the adjustment of inanimate things—to the needs of humanity.

The lime rock for fluxing is obtained in the hills near the smelter, and fire-brick and silica-brick, which have no equal, are made near the plant. The coal, coke and ore are brought from Butte by giant locomotives in heavy train loads of sixty or seventy cars, each car having fifty tons capacity, and thus the cost of transportation is reduced to a mere switching charge. In addition to the smelting plant, a very complete plant in all its details exists for the manufacture of mining and smelting machinery. Besides its own construction work, considerable work is done for mines and smelters throughout the Northwest, British Columbia and Alaska.

The city of Anaconda is adjacent to the great smelter and is connected with it by rail and electric lines. In consequence of its proxmity, it may look forward to many years of prosperity. It is situated in the Warm Springs Valley and enjoys a very pleasant location, girdled by hills, in the Main Divide of the Rocky Mountains. It boasts of a free

SEVEN BESSEMER CONVERTERS, WITH TWO SIXTY-TON CRANES, ANACONDA SMELTER, ANACONDA, MONTANA.

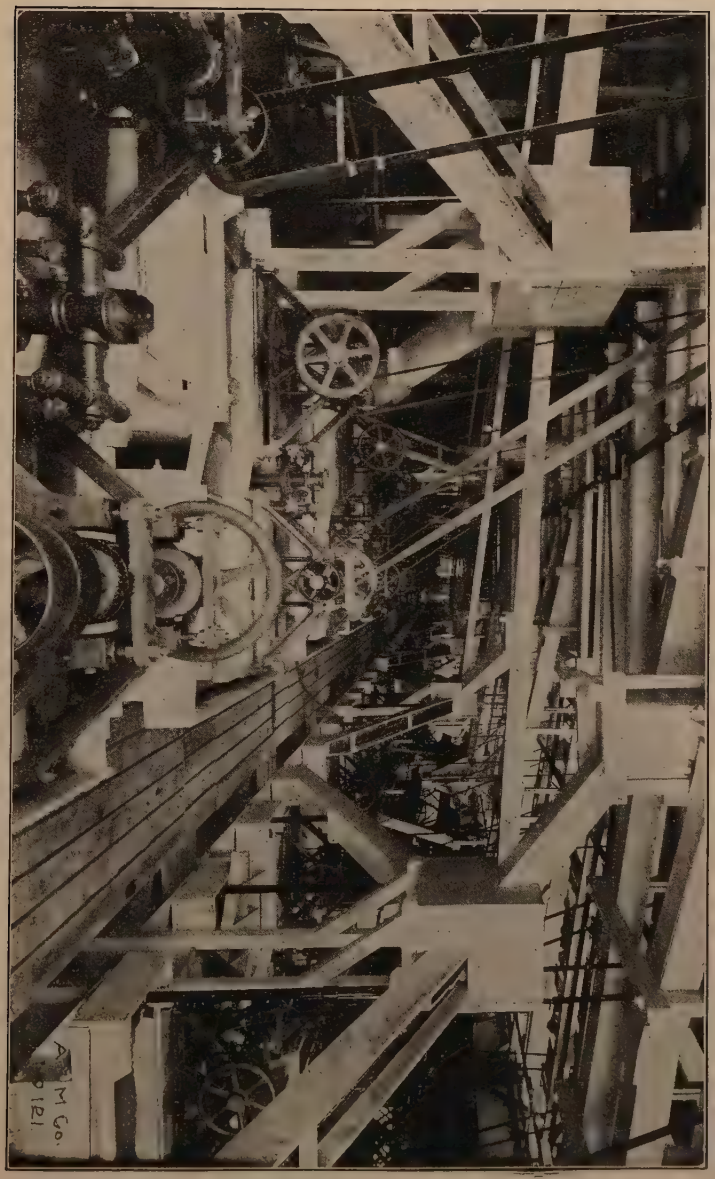
library, the leading daily newspaper, and the best appointed hotel in the state, and it enjoys all the conveniences of a well governed city. The hotel is newly remodeled and up to date in all respects, the appointments, fare, and service being exceptionally and surprisingly good for one found in the very heart of the Rocky Mountains.

The city is in direct and almost hourly touch with Butte, which is only twenty-eight miles distant. The Northern Pacific line passes through the county from north to south, which, with the terminus of the Oregon Short Line at Silver Bow, and the Great Northern terminus at Butte, all connected with Anaconda by the Butte, Anaconda & Pacific Railway, afford an outlet in every direction.

Custer County lies in the extreme southeasterly part of the state. It was named for General Custer, who was massacred with his command on the Little Big Horn, now in Rosebud County, but formerly a part of Custer County. It has an immense area, reaching approximately 14,000 square miles, being larger than several of the eastern states. It is a prairie county in its entirety, the climate and natural conditions making it a stock and wool growing section. The bad lands occupy the extreme southeastern part, but there are many good farms in the river valley. It is classed among the semi-arid counties and requires irrigation, which has been attempted so far in a moderate way with the Tongue River ditch. Lands outside the ditch can be bought to-day for $2.50 per acre, and those within the ditch section at $25 per acre, with water. The crops mainly raised are wheat and alfalfa. The prices charged for water are $2 per acre for cultivated land, $1.50 for hay land, $1 per acre for new land. This, of course, annually.

Miles City, the county seat, is a growing town of 2,000 population, situated on the bank of the Yellowstone River at the mouth of the Tongue River, and on the Northern Pacific Railway. It has good, paved streets, an electric light plant, and other modern improvements. The State Reform School is located here. Immense beds of lignite coal, which the settlers use to good advantage, underlie the entire county. The Northern Pacific Railway follows the valley of the Yellowstone River through the northwest part of the county.

Rosebud County was carved out of Custer County and has an area of about 12,000 square miles. It has the general features of Custer County, except that it is more moun-



MAIN JIG SECTION, ANACONDA SMELTER, ANACONDA, MONTANA.

tainous and a large portion of the southern part of the county is covered by the Northern Cheyenne Indian Reservation.

Forsythe is the county seat, is located on the Yellowstone River and on the Northern Pacific Railway, which follows the valley of the Yellowstone from east to west. It is the center of a generally better country than that to the east. The county is well watered but semi-arid.

Yellowstone County lies immediately west of Rosebud County, covers the valley of the Yellowstone River for a hundred miles, and extends from the Big Horn River on the southeast to the Musselshell River and Fergus County on the north. It is a fine agricultural county and is semi-arid, but the waters of the Yellowstone have been utilized in irrigating with great success. It has immense stock interests, which make it a very wealthy county. In 1902 Billings, the county seat, claims to have purchased more wool than any other place in the United States. The climate is fairly moderate in winter and quite warm in summer as compared with the western part of the state, owing to the low altitude, which is about 3,000 feet.

Billings is situated on the Yellowstone River and the Northern Pacific Railway, which still follows the Yellowstone Valley in its course to the west. The city is strong commercially and has grown steadily since its birth. It has a population of about 8,000, and all the improvements which would ordinarily go with a city of 25,000 inhabitants, including electric lights, sewer system, etc. A number of fine residences are being built, one in particular, which, in its appointments and decorations, classes with anything in the state. The opportunities for settlement here are good, but the public lands are all taken up, except in the upper ranges, which cannot be irrigated. Lands along the ditches can be purchased at a reasonable price.

Carbon County lies south of Yellowstone and between the Yellowstone River and Wyoming. It has an area of 3,000 square miles, and a population of 7,533, of which a very large portion are miners. The combined resources are mining, stock raising and farming, and although this is a small county, for the man of small means it is one of the very best in the state. The streams are quite rapid, so that numerous small ditches have been made to water the bench lands.

TAPPING FLOOR, FIVE BLAST FURNACES, ANACONDA, MONTANA.

Nearly the entire county is underlaid with bituminous coal, which is shipped for smelter and domestic purposes to a considerable distance. Many men are employed in the mines at Red Lodge, at Carbonado, at Bridger, and at Gebo, so that there is a large demand for agricultural products. At Carbonado the Anaconda Copper Mining Co. is erecting a large coal mining plant. Several small companies are operating collieries, and it is predicted that soon fully 10,000 men will be working in these mines. Silver and gold are found in the Wood River district, as well as several of the other districts. The county seat is Red Lodge, but there are other good places, like Gebo, which are destined to become business cities. The Northern Pacific operates a branch line to Red Lodge and to Bridger.

Sweet Grass County lies west of Yellowstone and Carbon counties, has an area of about 3,000 square miles, and a population of 3,086. This is a rich county, is well settled, and well irrigated, especially along the Yellowstone River and the valley of the Sweet Grass River, which runs into the Yellowstone from the north. Two canals are now being built, under the arid land law. A part of the county was settled by Hollanders, who have good farms and a cheese factory, and are very prosperous. This is one of the best parts of Montana.

Big Timber, the county seat, is located on the Yellowstone River and the Northern Pacific Railway, which traverses the county east and west, following the valley of the Yellowstone. It is a substantially built town, with a large volume of business, and has much pretensions to becoming a great wool market, having shipped 3,000,000 pounds of wool in 1900. A woolen mill is now being built to utilize this product. A flouring mill and a creamery are a part of the industries. Good mines are located in the Crazy Mountains, which, with other industries, will no doubt give Big Timber a brilliant future.

Park County lies west of Sweet Grass and borders the state of Wyoming on the south. It has a population of 7,341, and is named Park County since a small strip of the Yellowstone National Park covers the southern part of the county. Like most Montana counties, the resources consist of stock raising, farming and mining. The waters of the Yellowstone Valley traverse the county from the Park regions to the Sweet Grass country, giving the clearest and purest water that can be desired. The mountains are comparatively wild and the

TWELVE OF FORTY-EIGHT AUTOMATIC ROASTING FURNACES, ANACONDA, MONTANA.

valleys narrow. Mining is assuming considerable proportions, especially in the southeastern part, some good strikes being reported, while coal mining and the manufacture of coke is also increasing. The Northern Pacific crosses the county from east to west and the road to the Yellowstone Park from Livingston runs as far as Gardiner.

Livingston, the county seat, is located on the Yellowstone River and the Northern Pacific Railway, whose shops here have lately been doubled in size. This is a growing and substantial town. Population in 1900, 2,778.

Gallatin County lies west of Park County and the Yellowstone Park. The Gallatin River traverses the county from north to south and yields water for irrigation purposes, as do many others of the smaller streams. The greatest success is attained in the growth of all kinds of crops, especially alfalfa, and fruits. There are several flourishing villages in the county. Bozeman, the county seat, has a population of 5,000, two banks, two flour mills, churches, clubs, the State Agricultural College and station. The Northern Pacific enters the county from the east and follows the Gallatin and Missouri River valleys through Broadwater County.

Madison County borders on the state of Idaho, lies immediately west of Gallatin, has an area of 4,250 square miles, and a population of 7,695. It is the most southerly county of the state, covering the valleys of the Ruby, Madison, Willow and Jefferson rivers. Its resources are the same as most Montana counties. There is considerable rainfall in this county, so that little irrigation is required. Irrigated farm lands can be procured for from $8 to $35 per acre. This is cheaper than the same quality of lands can be had for in other parts of the state.

Virginia City, the county seat, was the capital of Montana territory, and the scene of early placer diggings, as was also Alder Gulch. Population in 1900, 578. Virginia City was the scene of great excitement and high prices. One dollar was paid for letters being carried to or from Salt Lake City; lumber brought $250 per thousand feet; potatoes sold for $6 per bushel, and wheat for $4 per bushel; flour averaged $30 per hundred pounds and in the camps reached $110 in gold in May, 1865, when paper money was worth but forty cents on the dollar.

With its large area of agricultural land and vast mineral

GRAND CANYON AND LOWER FALLS OF THE YELLOWSTONE.

resources Madison is one of the most promising counties in the state.

Beaver Head County lies west of Madison County and adjoins the Idaho line. Farming and stock raising are very profitable in these valleys, the soil being good, and not being far distant from Butte an excellent market is afforded. The Union Pacific traverses the county north and south, and Dillon, a lively town on this road and the Beaver Head River, is the county seat. Population in 1900, 1,530.

The Yellowstone National Park is almost entirely located in northwestern Wyoming, but the major part of the tourists

AN IRRIGATED BARLEY FARM IN GALLATIN VALLEY.

who visit it do so by way of Livingston. The area of this Park is 3,412 square miles. It consists of an elevated volcanic plateau, hemmed in by mountains whose peaks rise to a height of from 10,000 to 13,000 feet, the general level of the plateau being from 7,000 to 8,000 feet. The Main Divide of the Rocky Mountains crosses the Park in a circuitous line, its peaks being mostly extinct volcanoes. Electric Peak, the highest of the volcanoes, has an elevation of 11,155 feet.

The Park is filled with natural wonders, such as hot and cold springs, both mammoth and small, of all apparent colors and qualities, cliffs of natural glass, flowing and spouting geysers, beautiful lakes, deep canyons and great falls. Per-

haps of all these wonders, the beauties of Yellowstone Lake, "Old Faithful" geyser, Beryl Springs, the Paint Pots, and the Terrace may be enumerated as the most interesting, all of which are eclipsed in grandeur by the Grand Canyon and falls of the Yellowstone. The best of writers have admitted that their descriptive faculties were rendered powerless by the awe inspired by this vast but resplendent chasm.

EMIGRANT PEAK, NEAR YELLOWSTONE PARK.

The tourist season begins June 1 and ends September 1 of each year. The Park is sixty-two miles long and fifty-four miles wide, and the trip from Livingston to encompass it is made in five and a half days. The first day takes the traveler from Livingston to Gardiner, fifty-one miles by rail, and then seven miles by stage to the mammoth hot springs; the second day from Mammoth Hot Springs to Lower Geyser Basin,

by stage forty miles; the third day from Lower Geyser Basin to Upper Geyser Basin and return, by stage eighteen miles; the fourth day from Lower Geyser Basin to Yellowstone Lake hotel, by stage forty-seven miles; the fifth day from Yellowstone Lake hotel to Grand Canyon of the Yellowstone, by stage seventeen miles; the sixth day, Grand Canyon to Cinnabar, thirty-nine miles by stage, and to Livingston, fifty-one miles by rail, making a total of 270 miles, of which 168 are made by stage coach. The stage coaches are easy riding and seat from six to ten passengers each, and the hotels in the Park are comfortable, steam heated and electric lighted, each accommodating from 150 to 250 guests.

IDAHO.

The name Idaho is an Indian name and signifies "Gem of the Mountains." The state lies west of the Rocky Mountains, being a part of the Pacific Northwest. Its eastern boundary is formed by the Coeur d'Alene and Bitter Root mountains and the State of Wyoming. Nevada and Utah bound it on the south, from which point the state extends 485 miles to the Canadian line. Oregon and Washington lie to the west, the canyon of the Snake River marking the boundary line for more than a third of the distance. The area of the state is 84,800 square miles, of which 510 square miles are water.

NEZ PERCES OF THE PRESENT DAY.

EARLY HISTORY.—The territory now comprised in the state of Idaho originally formed a part of the Oregon territory. The Lewis and Clark expedition across the state, following largely the Clearwater River, is referred to in the general historical matter. The Coeur d'Alene country was settled about 1842 by the Jesuit father, De Smet, who founded a line of missions throughout the Rocky Mountain country, the most prosperous of which was probably the one near Coeur d'Alene Lake. During

CHIEF JOSEPH, OF THE NEZ PERCES, A GREAT INDIAN GENERAL.
Lee Moorhouse, Am. Photo. Pendleton, Ore.

the gold excitement of 1852 various prospectors came into the state, and in 1854 Fort Lemhi was erected on the Salmon River, among the Nez Perces, by a colony of Mormons, who were finally driven back to Salt Lake; a French Canadian settlement was also established on the St. Mary's River.

Owing to the Civil war and the fame of the Salmon River mines, a tide of emigration swept westward in 1862-3. In 1863 Congress constituted the territory of Idaho, which had been successively a part of Oregon, Utah and Washington; in 1864 a part of it was set aside as Montana, and in 1868 another part as Wyoming. In 1890, in its present size and form, it was admitted as the forty-third state of the Union, or thirtieth in the order of admission. In 1863, as a territory, it had four organized counties and ten mining towns. From 1865-8 and from 1874-8 the country was much disturbed by Indian wars. After this the development of the natural resources of the state went steadily forward, mining and agriculture making rapid advances. The Oregon Short Line built its road northward, which afforded better means of transportation, and irrigation was practiced with success. Boise was made the capital of the territory and of the state, and will remain so by special act until 1910, when the question of a transfer to another city will be submitted to the people. In this state the practice of polygamy is made a bar to citizenship.

Topography.—The surface of Idaho is exceedingly diversified. The state is a wedge-shaped plateau, the chief features of which are the drainage systems of the Snake and Columbia rivers, with an extensive arid plain along the banks of the former river in the southern part of the state. The country north of this plain is exceedingly mountainous. The Rocky, Bitter Root, Coeur d'Alene and Cabinet mountains extend along the northeastern border of the state, and in the center are the Clearwater, Salmon River and Saw Tooth ranges. In the extreme southeast are the Snake River, Goose Creek and Bear River ranges, and in the southwest the Owyhee. The Salmon River Mountains extend along the river of the same name and reach a height of 12,000 feet, their summits being rugged and mostly covered with snow. The surface of Idaho has an average elevation of 4,700 feet, rising from an altitude of 647 feet at Lewiston to 12,078 feet in Hyndman Peak in Blaine County.

Between the mountain ranges are many valleys watered by numerous streams, some being of considerable size. The larg-

NEZ PERCES VILLAGE, ON THE CLEARWATER, IDAHO.

est river in the state is the Snake River, which has its source in Yellowstone Park. It flows across the entire state in a broad curve, and, with the exception of a small corner in the southeastern part of the state, and in the Panhandle country, drains the whole state. This river has a number of falls and rapids, the more notable of which are the American, Twin, Salmon and Shoshone Falls, the latter having a descent of 210 feet. The basaltic cliffs, which flank the river, and the descending large volume of water make a sublime spectacle. On the west side of the state the river flows through a deep canyon, one of the most remarkable in the United States, in some places exceeding the Grand Canyon of Colorado in depth. The main tributaries on the east are the Salmon, which receives the larger part of the drainage in the central part of the state; the Wood, Boise, Payette, and Weiser, and in the southwest the Bruneau and Owyhee rivers. The Clearwater and Palouse rivers come into the Snake from the east and the northern part of the state, and the waters of the Panhandle drain to the Columbia through the Spokane River, which rises in the Bitter Root range, Clark's Fork and the Kootenai. Among the lakes of the state three are worthy of especial notice: The Pend d'Oreille, an expansion of Clark's Fork, thirty-five miles long and eight miles wide; the Coeur d'Alene, twenty miles long, and the Lower Priest, eighteen miles long and five miles in width, all of which are in the Panhandle country.

Geologically considered, the southern part of Idaho is a great lava plain, similar to the main Columbia Plateau of eastern Washington and Oregon. The soil throughout this region, whenever subjected to water, produces bountifully. The mountain ranges of this portion of the state are mainly of silurian and carboniferous ages. Numerous fossils have been found, including the remains of mastodons, elephants, and alligators and other saurians. In northern Idaho the mountains are chiefly eozoic. In this part of the state the elevated table lands produce without irrigation.

The mountains of the northern part of the state, including the upper portion of the Boise, Payette and Weiser valleys, are heavily covered with forests of white and yellow pine, larch and fir. The valleys and sheltered basins are covered with grasses, which afford excellent pasturage. The southern counties, or those of the Snake River plains, have a growth of sage-brush, and the country south and east of that river is covered with grass and sage-brush and a scattering growth of

HYDRAULIC MINING.

evergreens on the mountains. The timber resources of Idaho are almost unlimited. No state in the Union contains more extensive timber belts, though the timber in size and height is not so large as the forests west of the Cascade Mountains. These timber belts lie in the mountain districts in the more northerly part of the state, and are estimated to comprise 35,000 square miles, or forty-two per cent of the total area of the state. Lumbering has become an industry of importance, and with the extension of railway facilities into the mountains will attain large proportions. Four-fifths of the Bitter Root forest reserve and nearly all of the Priest River reserve lie in Idaho. The estimated stand is 450,000,000 feet, the greater part being yellow pine, with a quantity of red fir, and in the marshy districts dense masses of cedar.

Climate.—The climate of Idaho varies with the altitude, the same as in eastern Washington and Oregon, the air being dry and highly rarefied. In the mountainous districts the winters are extremely cold and there are heavy snowfalls, but on the plains the winters are quite moderate, while in the valleys the temperature is mild and the snowfalls light. The greatest rainfall occurs in the mountain regions of the north, the precipitation in the lower valleys and on the plains being in general so light as to make irrigation necessary to the growing of crops. The average annual precipitation for a term of years for the entire state has been 17.52 inches, but the range between the extremes in the various portions of the state is very great. Oakley, in Cassia County, one of the southern tiers of counties, has a precipitation of 8.03 inches, while the rainfall at Murray, in the extreme northern part of the state, is 46.88 inches. The annual precipitation of rain and snow at Lewiston is about twenty-four inches and the mean annual rainfall at Boise is 30.1 inches. The mean annual temperature at Boise is 50.9°, the range being from —28° to 107°. The climate is very healthy, perhaps no state in the Union showing so low a death rate.

Resources.—The leading industries of the state are mining, lumbering, and agriculture. The mineral products constitute the chief source of wealth. Mining is, however, in its infancy, owing to the lack of transportation in the mountains, which is needed very badly to bring coal to the camps and transport the ore to the smelters. This will no doubt be remedied in time, when electricity will be transmitted from Twin, Shoshone or other falls. Gold was first discovered on the

AUTO-FLOWING ALONG THE SNAKE RIVER, IDAHO.

Clearwater River at Orofino Creek in 1860. In 1862, in the Idaho Basin, placers were discovered which yielded in 150 square miles more than $50,000,000. In 1900 Idaho ranked fourth in the order of silver producing states, the output for the year being $8,312,372, coinage value, and $1,724,700 in gold. The Coeur d'Alene district of this state yields one-fourth of the lead produced in the entire United States and it is the chief source of supply for the smelters of Colorado, Montana and Washington. There are valuable copper deposits in the Seven Devils district, in Washington and Idaho counties. Cinnabar has been discovered, carrying a high per cent in quicksilver. Throughout the mineral regions there yet remain vast stretches of country practically unexplored, and new and important discoveries are expected each year. The latest finds are at Buffalo Hump, Rocky Bar, Atlanta and Skeltch Creek, but the sensational discovery was at Thunder Mountain in 1901. This mountain stands near the corner of Idaho, Lemhi and Custer Counties, is nearly encircled by the Salmon River, and is expected to become a great camp. There are six routes now laid out, the principal of which are from Red Rock, Mont., Black Foot, Shoshone, Lewiston, Boise and Stites.

The agricultural resources are great in almost all parts of the state. It is estimated that there are 16,000,000 acres of agricultural lands, large areas of which require irrigation. The state, as well as private enterprise, has given unusual attention to the irrigation problem, and great advancement has been made. The upper valley of the Snake River, from Maryville Falls has many canals, the upper Snake River plains being well adapted to irrigation. Other ditches are under advisement on a large scale, while still others have been constructed at Mountain Home, Glens Ferry, and in the Boise, Payette, and Weiser valleys. In the short period of ten years irrigation has added to the improved area thirty-eight per cent, and a farm wealth of $12,000,000.

North of the Clearwater River the country does not need irrigation, Latah County producing wheat equal to any section in Washington. The important fruit belts are along the immediate Snake, Boise and other valleys, and at Lewiston, farther north. The southeastern part of the state is better adapted to diversified farming—grains, grasses, vegetables and alfalfa yielding enormously.

The inaccessibility of Idaho has tended to retard its development. There being no navigable rivers in the state, it is

A SNAKE RIVER VALLEY FRUIT RANCH, NEAR LEWISTON, IDAHO.

evident that the transportation problem must be solved by the building of railroads. The construction of the Oregon Short Line northerly through the eastern portion of the state and west through the southern part encouraged very generally the existing industries. The Northern Pacific and the Great Northern cross the Panhandle in the extreme north, the former reaching Lewiston and Idaho County. The Oregon Railroad & Navigation Co. also crosses the Panhandle, reaching the Coeur d'Alene mines and the Palouse country, and is now building up the Snake River to Lewiston. Much has been said about a connection with the Northern Pacific via Lolo Pass and the Clearwater to Lewiston. The conditions seem to be more favorable to new developments in the immediate future.

There are many prosperous towns in the interior of the state, far from railway communication, which are the centers of the cowboy, ranchman and miner, and are often the seat of vast fortunes acquired from the ranging of sheep and cattle. The stage coach is in evidence in all parts of the state.

COUNTIES.

Lemhi and Custer Counties.—It may be said that all that part of the state lying south of the Salmon River in its course to the west is arid, and requires irrigation. This would include with these counties the southern part of Idaho County. The south, or main fork, of the Salmon River heads in the heart of the Saw Tooth Mountains, and runs northerly for a distance of 200 miles to Shoup, via Salmon City. The east fork and the Pahsimero head in the Lost River Mountains and empty into the main Salmon above Salmon City. The Lemhi heads in the Rocky Mountains and enters at Salmon City. This drainage area is an empire in extent and is wonderfully rich in agriculture, stockraising, timber and mineral resources. The principal industry is mining, but these counties are fast taking a prominent place in the state in agriculture and stockraising. The water supply is ample. Most of the irrigated lands are in Custer and Lemhi Counties, which lie at an elevation of from 4,000 to 6,000 feet. The principal development is in Custer County, in the vicinity of Challis. Here several ditches have been taken out, owned mostly by individuals. The developments on the Pahsimero River are chiefly in the vicinity of Morse and Goldberg. There is a large amount of good land in this valley that can be developed. Some of the

GREAT SHOSHONE FALLS, IDAHO.

irrigated lands at the head of Lost River are in Custer County. As the Lemhi flows deep below the main body of agricultural land the latter is watered by creeks coming in from either side. There are many opportunities here for those with small means to become prosperous. The Oregon Short Line branch road, now in operation from Blackfoot to Mackey, in Custer County, with the proposed extension to Salmon City, will afford adequate transportation for this rich region.

Challis is the county seat of Custer County, and Salmon City of Lemhi County, both being thriving towns with fine business blocks, water systems and lighting plants.

THE SNAKE RIVER VALLEY.—With the exception of an area of 4,000 square miles, in the southeast part of the state, which is drained into the Salt Lake Basin, all the arid land of Idaho lies within the drainage of the Snake River, and this river and its tributaries must furnish water for all this region, two-thirds of which will be supplied direct from the Snake River itself.

A great sheet of lava extends from one side of the valley to the other and throughout its entire length. In some places its thickness is ten feet, while near the central portion 800 feet is exposed. In most places its surface has been covered to a great depth by an alluvial deposit of silt and gravel brought down from the neighboring mountains. This in turn is covered by soil of volcanic origin, which, when properly irrigated, possesses wonderful fertility. In the great central portion ridges and great beds of lava are exposed on the surface, but for the most part a covering of soil exists which sustains a heavy growth of sage-brush and the entire region is used as a winter range for sheep and cattle. The upper end of this valley lies at an elevation of 5,500 feet, while the lower and western end (Washington County) has an elevation of about 2,200 feet. It is from seventy-five to 100 miles in width between the foothills of the opposite mountain ranges. The surface of the valley varies from flat bottom land, sloping with the river, to high plateaus, falling back, terrace above terrace, to the foothills on either side. Henry's Fork, in the eastern part of Fremont County, flows on the top of a lava sheet to a point several miles southwest of St. Anthony to a point on the main river at Idaho Falls. The flow is on top of an alluvial deposit which rests on the lava. From Idaho Falls to a point ten miles below, the river flows on top of the lava, but from this point to American Falls the lava is covered by an alluvial deposit consisting chiefly of gravel. At American Falls the river descends

AN IRRIGATING VIADUCT.

about fifty feet, the Oregon Short Line crossing at this point, the bridge being right over the falls. The river now flows between high benches for a distance of forty miles; westward to the Cedars it flows between high lava ridges that rise rapidly a short distance back from the stream. Below the Cedars these ridges are covered to a great depth with a fine volcanic soil. From the Cedars to the mouth of Clover Creek, a distance of eighty miles, the river is in most places a raging torrent, having an average fall of about twenty feet to the mile and cutting its channel deep in the lava sheet many hundred feet below the level of the valley. In this stretch of the river several magnificent falls occur, the most noted being the great Shoshone Falls (210 feet) and Twin Falls (180 feet), while at intervals other vertical leaps are made, in many cases from twenty to fifty feet, all suggesting, in addition to the natural grandeur of their surroundings, the wonderful electrical possibilities which can be utilized in the industrial development of the state.

From the mouth of Clover Creek to the state line, a distance of about 140 miles, the river flows on top of an alluvial deposit, which forms little valleys in the canyon from 400 to 1,000 feet below the level of the great plains on either side. Throughout this section it flows on top of a deep alluvial deposit brought down from the mountains by the streams in the southeast, and the high plateaus which border it on either side for the last 300 miles of its course give way to broad and gently sloping valleys of the different tributaries.

From the southwest corner of Washington County to the mouth of the Salmon River, the Snake River flows at the bottom of a canyon at the foot of the steep slopes of high mountains on either side. A few miles below the Salmon the mountains fall back, leaving broad bench lands bordering on the river from 500 to 3,000 feet in elevation. Near Lewiston a few low benches occur, lying from twenty to 150 feet above the river, and at an elevation of about 750 feet above the level of the sea. These lower benches are irrigated, but the high plateaus of Nez Perces County are cultivated without irrigation.

No branch streams join the river from the north between Henry's Fork, in the extreme northeast corner of the state, and the Big Wood River in Lincoln County, a distance of nearly 300 miles, the courses of the streams which rise in the mountains on that side being obstructed by this great lava de-

POCATELLO, IDAHO.

posit. The description of the Lost River country is given later with Blaine County. While a great central plain containing more than 5,000,000 acres, is not crossed by a single stream, it is by no means worthless, for it is one of the best winter ranges in the west, and large sections of it can be reclaimed by irrigation.

Fremont, Bingham and Bannock Counties constitute the upper Snake River Valley. Here is the beginning of the greatest irrigation district in the United States. Canals have been constructed and others are being pushed to completion for the irrigation of all that vast and fertile region lying between the eastern boundaries of Fremont County and American Falls in Oneida County, comprising about 700,000 acres of land. The total length of these canals, when completed, will be not less than 650 miles, and land throughout this region can be purchased at extremely moderate prices. The source of the water supply is from the high plateau and never failing snows, and lakes of Yellowstone Park. The flow of the river is quite regular, and the flood-flow occurs late in the season. From St. Anthony to Blackfoot the river banks are low and the river has a fall of but five feet to the mile, so there is no difficulty of diverting the water from it into ditches. The large canals have for the most part been constructed by the settlers themselves and were not expensive, some costing not more than from $1.00 to $4.00 per acre for the land irrigated, while the annual maintenance, including wages of overseer, or water master, does not amount to over twenty cents per acre, and on some canals as low as five cents per acre. At American Falls a high ridge of lava crosses the river and ends the upper irrigation district. This strip of country is about 135 miles in length and from five to twenty miles in width, contains nearly 1,100 square miles, and of this vast area about one-third is now being tilled.

This section of Idaho is especially adapted to the raising of vegetables, the hardier fruits, hay, wheat, oats, barley, and especially alfalfa. The conditions and cost of two or three of the many canals are here cited for the sake of reference.

The Marysville Canal & Improvement Co. main canal, with laterals, has a length of about thirty miles and intends to irrigate 25,000 acres. Estimated cost, $20,000. The water is sold at $6 per inch and annual cost of maintenance. Idaho Canal Co. cost $50,000, belongs to the resident land owners, and a share of stock costs $15, which entitles the owner to ten

TWIN FALLS, IDAHO.

miner's inches of water. The annual maintenance is about $1.00 per share. The Reservation Canal, about thirty miles in length, is designed to water the Fort Hall Indian Reservation, where there are 125,000 acres of land below irrigation level, 14,000 acres of which has lately been thrown open to settlement around Pocatello. The American Falls Canal & Power Co.'s canal heads ten miles above Blackfoot and is 200 miles in length, including the laterals. It cost $325,000 and is under the Carey act.

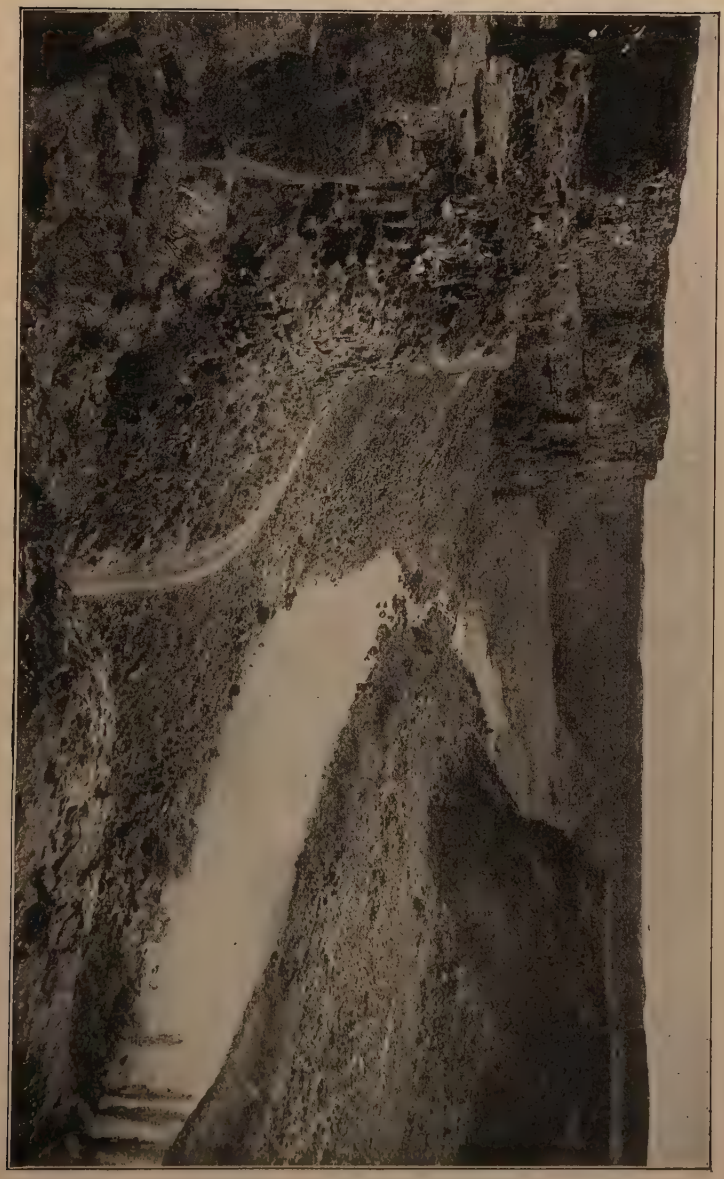
The counties of Fremont, Bingham and the upper part of Bannock constitute the upper Snake River Valley and are as rich as any counties in the state. They will develop large diversified farming communities, and inexhaustible ranges for cattle and sheep. In the vicinity of Idaho Falls, in 1902, there were fattened on alfalfa and wheat and shipped 20,000 head of hogs, which gives a fair idea of the fattening qualities of this wonderful plant, which is raised under irrigation in such prodigious crops. Thousands of acres here are unsettled and open to filing under the desert and homestead acts.

Idaho Falls, on the Oregon Short Line, with a population of 1,700, has water works, electric lighting plant, telephone system, seven churches, a creamery, flour and planing mills, and the State Experimental Station. The price of land under ditch in this vicinity ranges from $10 to $20 per acre; unimproved, $5 to $10 per acre.

St. Anthony, on the Oregon Short Line, has a population of 1,200, good schools, churches, and several industries. Blackfoot, on the same line and the junction of the Salmon River branch line, has a population of 1,500, is the seat of the state insane asylum, the United States Land Office, the largest district in the state, and is quite a shipping point.

Bannock, though one of the southeast counties, is a part of the upper irrigation district. It has a large section of agricultural lands on which large flocks of sheep and herds of cattle are ranged.

Pocatello is the county seat, has a population of about 5,000, and is a great railroad center, being a terminal point for the Oregon Short Line from the east, via Granger on the Union Pacific, also via Salt Lake and Ogden from the Southern Pacific Railway, Portland, via the Oregon Railway & Navigation Co., and Butte, Mont., from the Northern Pacific and the Great Northern, thus having communication from all points of the compass. Large railroad shops are located here, em-



BLUE LAKES, IDAHO.

ploying upwards of 500 men, and the city is in a thrifty condition. Mines are being opened in the near vicinity and everything points to this soon becoming a mining center.

Bear Lake County is the extreme southeasterly county of the state. This is a county of high altitude, lying in the Rocky Mountains, and is devoted largely to cattle and sheep raising. The mining interests are becoming prominent. Bear Lake, a body of water covering eighty square miles, the greater part of which is located in this county, is one of the most beautiful lakes of the mountains, and abounds in trout, white fish, bass and other varieties of the finny tribe.

Montpelier is situated on the Oregon Short Line and has a population of 2,000. It is growing very fast at present, good business blocks and other buildings being erected. Paris is the county seat, located on the Oregon Short Line, and is another good town. This county is having a genuine mining boom in a conservative way.

Oneida, Cassia and Owyhee Counties are bounded on the north by the Snake River, and on the south by the boundary line of the state. They have a mild climate and are therefore capable of producing all the agricultural crops and fruits, and are comparatively well watered. The largest body of level land is perhaps found in the Cache Valley, in the eastern part of Cassia County, but which lies too high for irrigation. Farther to the east considerable land is irrigated along several creeks. On Deep Creek and the Malade Valley, in the western part of Oneida County, are the best opportunities for water storage sites.

In Cassia County is the site and district covered by the Twin Falls Land & Water Co., which is an enterprise involving the reclamation of 271,000 acres of land, to cost approximately $1,500,000, and is perhaps the largest individual irrigating undertaking in the United States. Two hundred and thirty thousand acres of land are located in this county and 41,000 on the north side of the Snake River, in Lincoln County. The average altitude of these counties is 4,000 feet, and the climate is very mild. In Cassia County are some of the richest fruit lands in the state, the sun during the summer months striking the lower valleys with almost a tropical heat. Three dams will be constructed at Twin Falls on the Snake River, to a height of fifty-four feet. The river at this point is 1,600 feet in width and will be raised to a height of thirty-four feet. This land is subject to the Carey act, therefore only

MAIN STREET, BOISE, IDAHO.

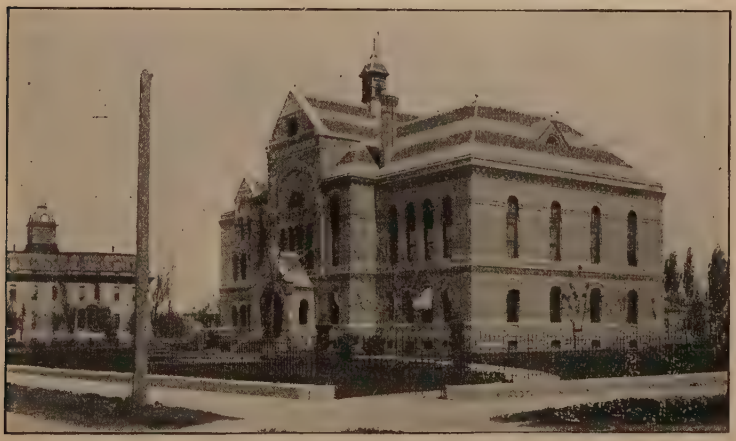
160 acres will be sold to an individual. There will be a town at the dam and a water-power site named Milner, and another named Twin Falls, to which a railroad connected with the Oregon Short Line is projected. The majestic Shoshone Falls is in this district.

With the exception of a few scattered ranches along the narrow bottom of the rivers, irrigated by short ditches, or water taken out by current wheels which lift the water direct from the river, the Snake River itself is not used for irrigation purposes from American Falls to Lewiston, owing to the depth of the valley proper.

The northern part of these counties, west of Pocatello, consists of high plateaus, a part of the Snake River plains. They lie at an elevation of about 3,000 feet and extend back from twenty to sixty miles. Back of these plains is a range of mountains, the summits of which, in places, are in Nevada, but the northern slopes parallel the Snake River. The Salmon and Bruneau rivers drain the central district, and both flow in deep canyons. On Cedar Creek the farmers have constructed a canal, and there are several ditches along the Bruneau River. Beyond the ranches are scattered here and there in Owyhee County, which is largely a stock country, but a veritable storehouse of mineral wealth. The De Lamar and Trade Dollar mines, famous the world over, are here situated. All the agricultural products in this vicinity have ready sale at good prices in these camps. Silver City is the center of the mining districts of Owyhee County, and is reached by a branch of the Oregon Short Line.

Blaine County and the Lost River Country.—It was stated before that no running streams enter the Snake River on the north from near its headwaters to the Wood River, in Blaine and Lincoln counties, or a distance of about 300 miles. An area of about 4,000 miles is drained by several creeks, some of considerable size, which at one time evidently formed an important tributary to the Snake River. Its course is hard to guess, for the great lava sheet has not only filled it, but obliterated all traces of its existence. The principal streams forming this disconnected drainage system are the Big and Little Lost rivers, Birch, Blue, Medicine Lodge, Beaver and Camas creeks. The mountains drained by these streams rise to an elevation of from 8,000 to 12,000 feet, and are known as the Lost River Mountains, the main range crossing the state from east to west. Not far from the base of these moun-

tains the waters of the streams sink from sight. Before these creeks were used for irrigation their waters were discharged into shallow lakes on the lower portions of alluvial plains, the lakes being evaporated during the course of the summer from the intense rays of the sun. Nearly the entire flow of these streams is now utilized. Good land is very plentiful, consequently the streams are overtaxed and a shortage of water is the rule. There are from seventy-five to eighty ditches taking water from the Big Lost River, the valley being under cultivation for about sixty miles. It is said that it is practicable to divert the water from a fork of the Salmon River into one of



CAPITOL BUILDING, BOISE, IDAHO.

the upper branches of that stream. If the scheme is feasible a large territory of very desirable land can be reclaimed. It is estimated that 5,000 acres of land are now irrigated in this valley. It is advocated by those well acquainted with the country that it is feasible to divert the water of Henry's Fork in the northeast part of Fremont County from a point high enough to cross the divide between Shotgun and Camas creeks. In this territory many thousands of acres of magnificent land could be reclaimed. The great Central Plain, along the north bank of the Snake River, will perhaps always remain in a desert condition, being used at present as a winter range for cattle and sheep, although the underground flow from the Lost River Mountain streams may be discovered and brought to the surface.

From Blue Lakes to the Oregon state line Snake River is fringed at intervals with small bottom lands, most of them sheltered by the high canyon walls, or bluffs of the upper plateau. Between Blue Lakes and the mouth of Malade River the water supply for these little valleys is obtained from the huge springs which gush out of the north wall of the Snake River Canyon which are thought to be from the Lost and Wood rivers drainage. The flow of these springs is constant, both winter and summer. At Thousand Springs, at the head of the Hagerman Valley, they burst out through a porous stratum covering a distance of one-half mile and fall 180 feet, with the roar of a great cataract, into the valley below. For a distance of nearly ten miles below this point springs of great volume break out, some forming falls of from twenty to eighty feet. Thus what is known as the Snake River Desert, which constitutes a part of Freeman, Bingham, Lincoln and Blaine counties, is explained. The Wood River district in Blaine County, which adjoins the desert, is a very rich district. Though of high altitude, most crops are grown, and stockraising is followed extensively. The great mining camps at Hailey and Ketchum, the latter being the terminus of the Wood River branch of the Oregon Short Line, are thriving centers of trade.

Lincoln County.—This county, lying at about the center of the great arid desert, is covered with a heavy sage-brush growth and is not inviting to the eye of the tenderfoot, yet it affords the best of winter range for stock, and is perhaps the very center of the stock interests. The soil is deep and rich, but there is no opportunity for irrigation except immediately adjoining the Snake River, where quite a percentage of the large irrigation district of the Twin Falls Company is located. It has been advocated strongly that Shoshone Falls should produce the electricity as a power for a vast pumping plant to raise the waters of the Snake River to the height of the plateaus, thus affording relief to a large immediate region.

A few miles below Shoshone Falls, in the lower or immediate valley of the Snake River, there are about 1,000 acres of land which has been reclaimed by water from Blue Lakes, and a considerable portion planted to orchards. This is known as the Blue Lakes or Perrine farm, and has been a medal winner at all the great expositions for the excellence of its fruit for several years. There are many other opportunities to win medals if the water can be obtained. There graze every winter

LOADING WHEAT ON THE SNAKE RIVER, ABOVE LEWISTON, IDAHO.

in this county not less than 1,500,000 sheep. Five hundred thousand were shipped in 1902. The majority of the wealth of the county, up to the present time, has been made from the sheep industry.

Shoshone, a lively little town of 400 inhabitants on the Oregon Short Line, has representative stores and banks with a capital in business befitting a much larger place. This is the headquarters of the sheep interests.

ELMORE AND BOISE COUNTIES.—These two counties are noted for their mineral productions. At Mountain Home and Glenns Ferry, on the Oregon Short Line, in Elmore County, the creeks afford fine plateaus for irrigating. A new system is being projected at Glenns Ferry by building a canal from Mammoth Springs, referred to before, the water being brought in a six foot wooden pipe and held up by a wire cable suspension bridge which carries it across the Snake River. It is expected that this will irrigate 25,000 acres of land. The lands irrigated at Mountain Home are under what is called the Long Tom Reservoir system.

Boise County has a wonderfully rich valley in every way and is but moderately irrigated. There are very good opportunities here to divert water in a small way.

ADA AND CANYON COUNTIES cover the valleys of the Boise and Payette rivers, which are identical in many ways, the former being the largest body of irrigable land in the southwestern part of the state. Here is a great widening of the Snake River plains, there being 634 square miles under ditches completed and projected, a large portion of which is now successfully growing all kinds of crops, especially fruit. The Payette Valley in Canyon County has an altitude of from 2,100 to 2,800 feet, the irrigable portion being about twenty miles in length to sixty miles of the Boise Valley. It contains an area of 85,000 acres. The soil is a volcanic sandy loam and very fertile. The interests of Canyon County are quite diversified, some very large flocks of sheep being found here, The land in these two valleys is perhaps the most valuable in any part of the state, it being no uncommon thing to gather from six year old trees 250 pounds of apples, and from ten year old trees 1,000 to 1,200 pounds.

Nampa, Caldwell, Palmer and Payette are all on the Oregon Short Line and are thriving places. The State Agricultural Experiment Station is located at Nampa.

Boise, in Ada County, is the county seat and capital of the

JUNCTION OF THE SNAKE AND CLEARWATER RIVERS, LEWISTON, IDAHO.

state. It has a population of 8,068. This city is the business center of the southern part of the state; the citizens are wide awake business men, and there is no more beautiful and home-like city in all the west. It has all the improvements required by a city of its size—street car service, a really first class hotel, many substantial public buildings and a natatorium, perhaps the finest bathing place west of the Rocky Mountains.

The state capitol presents the trade mark of the state to the visiting public by displaying along the walks leading to it large specimens of gold, silver, galena, and copper ores taken from its mines. There is no better way of advertising its mineral resources than this. The government maintains a garrison east of the city, and penitentiary and soldiers' home are located here. The winter climate being mild, many mining and cattle men and transients from other states make this their winter home.

Washington County lies in the extreme western part of the state, adjoining Oregon. It contains many fertile valleys, the largest of which is the Weiser, all of them being well watered and abounding in timber. The Seven Devils mining district, situated in the northern part of this and in Idaho counties, is proving very rich in copper and gold. A number of large irrigation systems are now in operation and others are projected. The Weiser Valley, which is irrigated, is the section of country near the town of Weiser on the Oregon Short Line and the Snake River. This valley has a wide range of products, a mild climate, and is but a continuation of the Payette Valley.

Weiser has a population of 2,000, two banks, wholesale and retail stores, its buildings being built largely of brick, a college, the largest fruit evaporator in the state, and a large flouring mill. At this point the Oregon Short Line turns to the west and crosses the Snake River into Oregon.

Idaho County is the largest county in the state, is very centrally located, and extends from the Panhandle on the north well into the southern body of the state. The county covers the westward valley of the Salmon River, the middle and south forks of the Clearwater River, and extends from Montana on the east to Oregon on the west. This county has immense timber areas and a large portion on the eastern side has been set off as a timber reserve. Its mining interests are also large, and there is sufficient rain throughout the northern part to insure the maturing of crops. If needed there is ample water for

AN OPAL MINE, MOSCOW, IDAHO.

irrigation. This is a part of the famous Clearwater country, consisting of fertile valleys and high prairie plains, and has considerable mining activity. There is a quantity of government land to be had and there are perhaps better openings here for those of moderate means than in most parts of the state. There are several thriving towns in the northwestern part, Stites being the terminal of a branch of the Northern Pacific Railway from Lewiston and Spokane.

Nez Perces and Latah Counties.—These two counties border on southeastern Washington. They cover the upper Palouse Valley, the Potlatch and the lower valley of the Clearwater rivers, and are really a combination of these countries, being a little higher than the main Palouse, and therefore have more rainfall, but irrigation is necessary for raising fruit in the valleys. The wealth of this country is immense in timber, mineral and agricultural products.

The Lewiston country, at the confluence of the Snake and Clearwater rivers, is the entrance to the central portion of the state. This was the route taken by Lewis and Clark in the early part of the previous century and here to-day stand living monuments to these men in Lewiston, on the Idaho side of the Snake River, and Clarkston, on the Washington side—two thriving towns connected by a magnificent steel wagon bridge over one-third of a mile in length. These towns are located at the only widening of the Snake River Valley for several hundred miles of its tortuous canyoned course, and are the topographical center of a great region and should always enjoy great prosperity. Their claim for 1903 is a population of 7,500 conjointly, and that the tributary population equals 50,000. The valley is open prairie and the lands, which are irrigated, produce enormously in fruits and other crops. Lewiston has the Nez Perces and other orchards and the boats along the rivers transport the wheat which is grown in vast fields on the uplands. The Northern Pacific Railway has entered the city of Lewiston from Spokane and extended a line to Stites in Idaho county; the Oregon Railway & Navigation Co. is building a line up the Snake River, and a movement is on foot to build a new rail route with a Montana connection via the Clearwater Valley. Further, the government has been urged, in the interest of the whole Inland Empire, to improve the Celilo Falls of the Columbia, with a fair prospect of success. This, with some improvement of the Riparia rapids, would give these cities a water communication with the sea.

Lewiston and Clarkston have many stores, three banks, two newspapers, a United States Land Office, state Supreme Court, and state normal school. They enjoy the advantage of cheap water power from the Grande Ronde Valley in Washington, electrically transmitted, and invite new manufacturing enterprises in the use of the raw materials of wheat, wool and timber. The town of Clarkston lies in Asotin County, Wash., and the business interests of these two cities, and in fact this whole region, are identified in every way, except politically, with the country to the west.

Moscow, the county seat of Latah County, is on the Northern Pacific and the Oregon Railway & Navigation Co. railways, and has a population of 5,200. It has paved streets, a state university, flouring mills, and good business blocks. Other cities are Genesee, Julietta and Kendrick.

WHEAT PILED READY FOR SHIPMENT, NEAR MOSCOW, IDAHO.

The prices of land in the Clearwater Basin are about $125 per acre for irrigated fruit land, the cost of planting and taking care of it being additional. The uplands, that is the plateau lands, which are adapted to grain raising, bringing from $5 to $15 per acre.

Shoshone and Kootenai Counties.—These two counties are in the extreme northern part of the state and are known as the Panhandle. They are noted for their mineral wealth, taken mainly from the Coeur d'Alene mines, in the northern part of Shoshone County, and for the manufacture of lumber throughout this entire upper section. Shoshone is the most populous and the wealthiest county in the state. Idaho, in 1901, produced as a whole from its mines, a value of $18,000,000; of this the Coeur d'Alene mines produced $9,500,000. The products of these mines, although silver bearing, carry so much lead that they are in demand at the different smelters throughout the northwest. To-day the names of Wallace, Wardner, Murray and others are prominently known throughout the mining world. Fifty per cent of the lead mined in the United

States comes from the Coeur d'Alene Mountains, within a radius of twenty miles of Wallace. These towns are reached by the Oregon Railway & Navigation Co. from the west, and the Northern Pacific branch from Missoula.

The St. Joe River district in Kootenai County is the largest lumber district, Harrison, located on that river, having ten saw mills. St. Mary's and Coeur d'Alene river valleys contain large timber tracts. There is a timber area of 2,600 square miles along the Canadian boundary line, which is one of Idaho's greatest forests. The yellow pine, fir, and tamarac along the table lands of the Kootenai and Pend d'Oreille rivers, in the

LAKE PEND D'OREILLE.

vicinity of Bonners Ferry, constitute the major portion of the available timber of the Panhandle.

WASHINGTON.

This state is known as the "Evergreen" state, owing to its dense evergreen forests; also as the "Chinook" state, probably from the use here of what is known as the Chinook language, a jargon which enabled the Hudson's Bay Co. people and the whites in general to communicate with the different tribes of Indians. The prevailing moist, westerly wind, known as the Chinook wind, may also have had some influence in naming the state. Washington lies in the extreme northwesterly part of the United States, bordering the Pacific Ocean on the west, Canada on the north, Idaho on the east, and Oregon on

the south. The length of the state from east to west is 360 miles, and from north to south 240 miles, comprising an area of 69,180 square miles, of which 2,300 square miles is comprised of water. The census of 1900 gives the population as 518,103, which in all probability at the present time is at least 700,000.

Early History.—The earlier discoveries on the coast are previously given in the general history of the Pacific Northwest. The present state formed the central part of the Oregon Territory, and was claimed by both Great Britain and the

FORT VANCOUVER, WASHINGTON, 1855.

United States. It was discovered and the straits named by Juan de Fuca in 1592; was visited by the Spanish in 1775; by Captain Cook in 1778; the Columbia River was ascended by Captain Robert Gray in 1792, and the same river traversed by Lewis and Clark in 1805-6. Fur traders established depots at the mouth of the Columbia in 1811, and later some settlement was made in southern Oregon, but the first white people who were not trappers, fur traders, or explorers to come to Washington were the missionaries, Dr. Marcus Whitman and party in 1836-7, who established themselves near the present site of the city of Walla Walla, and the Rev. H. H. Spalding,

who opened a mission at Lapwai. Others came later. The story of Dr. Whitman's famous wagon, on the sides of which was painted "Oregon or the Grave," his labors in educating the Indians, his celebrated ride to the capitol at Washington in midwinter, when he notified the government of the influx of British settlers, his return with many more wagons, and his martyr-like death in 1847, are a part of the history of the great struggle. In 1840 Joel P. Walker arrived with his wife and five children and are entitled to the honor of being the first settlers, for they were actually seeking homes. During the same year some Rocky Mountain men arrived; in 1841 twenty-three families, aggregating sixty-three persons, came from the Red River under the auspices of the Hudson's Bay Co. This caused Whitman to make his long ride across the continent from pure loyalty to his country. A party of 112, under Colonel Lovejoy, came in 1842. From this time on settlers arrived yearly with slight interruptions.

Permanent settlements had now been made, the boundary question had been forced to an issue and decided in 1846, and the territory of Washington was organized in 1853. Tumwater, at the head of Puget Sound, was settled in 1845; Fort Steilacoom and Port Townsend in 1851; Seattle in 1853; and many other pioneer settlements were formed through the succeeding years until the territory was admitted as the forty-second state of the Union on November 11, 1889.

Topography.—The most prominent physical feature of the state is the Cascade Range of mountains, which divides the state into two unequal sections, differing widely in characteristics, resources and industries. These mountains have an elevation of about 8,000 feet, the highest peak being Mount Rainier, or Tacoma, with an altitude of 14,526 feet. It is covered with snow throughout the entire year, and bears several large glaciers. To the south are Mount St. Helens, 10,000 feet, and Mount Adams, 12,470 feet, and northward, near the Canadian border, Mount Baker, 11,100 feet. All these mountains carry snow fields both winter and summer.

The topographical feature of western Washington is that myriad of bays and harbors, a body of land-locked salt water of fully 2,000 square miles in area, with a remarkable length of shore line, known as Puget Sound. This is an enchanting sheet of water, hemmed in on the east by the rugged Cascades and on the west by the serrated Olympics. The scenery is very picturesque, and the changing shades of light and color at

ABOVE THE CLOUDS ON MOUNT ST. HELENS. THE COLUMBIA RIVER IS SEEN 100 MILES DISTANT.

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sunset are wonderful. Taking into account the length of the Strait of Juan de Fuca, Olympia, the capital city of the state, situated on the Sound near its head, would be more than 200 miles from the Pacific Ocean. The depth of this body of water is such that the largest ocean craft may without trouble reach almost any part.

Beginning near the northern boundary of the state, the following principal streams flow westward from the Cascade Mountains into Puget Sound: The Nooksachk, Skagit, Snohomish, Duwamish, Puyallup, Nisqually, and the Skokomish, from the Olympics in the west. Of these streams the Skagit is the only one which may be truly called a navigable stream. The Chehalis River discharges into Gray's Harbor on the coast and is navigable as far as Montesano.

In the extreme northwest, surrounded by the Pacific Ocean, the Strait of Juan de Fuca and the Sound Basin, are situated the Olympic Mountains. These mountains afford a majestic scene from the water and from any high point along the Sound. They have not been fully explored, owing to their broken character. The sides are often abrupt and the canyons deep, so that of their very interior little is known. Mount Olympus, the highest peak, has an elevation of 8,150 feet.

The great natural feature draining the entire eastern portion of the state and forming a boundary between Washington and Oregon on the south, is the Columbia River. It rises in Canada in two sources, one entering the United States in Montana, the other in eastern Washington, follows a southerly and westerly course to the 46° of latitude, where it turns abruptly to the west and flows to the Pacific Ocean. The Columbia Basin and tributaries include a part of Montana, the entire state of Idaho, all of eastern Washington, and practically all of Oregon. So far as Washington is concerned, its principal tributaries are the Okanogan River, which rises in British Columbia and flows southward through Okanogan County; the Spokane River, which rises in Idaho, flows northwesterly, and joins the Columbia at the eastern elbow of the Great Bend at the junction of Stevens, Ferry and Lincoln counties. This river is noted for its falls at the city of Spokane. The Yakima River rises in the Cascades, flows in a southeasterly course through Kittitas and Yakima counties, its valley being the highway of the Northern Pacific Railway, and reaches the Columbia a few miles above the mouth of the Snake River. Last and the most prominent of all the tributaries, is the Snake River, which rises

MOUNT RAINIER, OR TACOMA, FROM PUGET SOUND. TACOMA IN THE FOREGROUND.

in Yellowstone Park in Wyoming, flows through southern Idaho, then turns northward and in a deep canyon forms the boundary between Idaho and Washington, then turns westward, reaching the Columbia a few miles below the mouth of the Yakima. Many smaller tributaries to the Columbia—the Methow, Chelan, Entiat, Wenatchee, the valley of the latter being the highway of the Great Northern Railway, and the Klickitat, whose source is the snow of Mount Adams, come in from the western slopes of the Cascades. The Sans Poil and Kettle rivers, rising in British Columbia, flow south through Ferry County. The Columbia has two important tributaries coming in west of the Cascades, one the Lewis River, which heads high up on Mount St. Helens, and the Cowlitz, which rises in the glaciers of Mount Rainier. The Northern Pacific uses Cowlitz Valley as a means of reaching the Columbia Valley on its line between Tacoma and Portland.

The Columbia River is the largest in this state and is navigable from its mouth to The Dalles, and from Wenatchee to the mouth of the Okanogan. Throughout the remainder of its length the numerous rapids left in the channel cut through the lava bed, making navigation impossible. The falls above The Dalles, known as Celilo, it is believed, can be overcome, and if so, with a moderate expenditure at the Riparia Rapids on the Snake River between Columbia and Whitman counties, navigation may be had at perhaps all seasons of the year from the vicinity of Lewiston, Idaho, to the sea.

Throughout the Cascade and Olympic mountains are many lakes which have been formed by glacial action, and some of them are quite large. The largest is Lake Chelan, in Chelan County. It is a long, narrow and beautiful body of water, lying between high mountains, and has a depth of 1,500 feet. In the mountain regions several lakes occupy old volcanic craters. Two exquisite lakes, Crescent and Sutherland, in the Olympics, are situated about sixteen miles from Port Townsend. They are great sporting resorts for the angler, as indeed are all the mountain lakes.

East of the Cascade Mountains, in the Columbia Basin, that portion of the state lying along the Canadian boundary and north of the Columbia and Spokane rivers, covering mainly the counties of Okanogan, Ferry, Stevens and Spokane, is known as the Okanogan Highlands. It is generally rolling in character, with long slopes leading down to the river valleys.

Its height above sea level ranges generally from 6,000 and 7,000 feet to less than 1,000 feet along the principal streams.

The region south of the Columbia and Spokane rivers and east of the Cascades is known as the Great Columbia Plateau, a vast extent of country, built up by many successive flows of lava from a depth of from 2,000 to 4,000 feet. The general surface above the river channels is quite level, but occasionally rises into hills, as in the Palouse country, which were probably formed by drifting sand and soil; the southwesterly portion of these hills being gradual slopes, and the northeasterly portion more abrupt, indicating a southwesterly wind as the cause. The rivers in all instances flow in deep canyons made by the erosion of the basalt, which stands out in imposing cliffs at every turn.

THE HEART OF THE OLYMPICS.

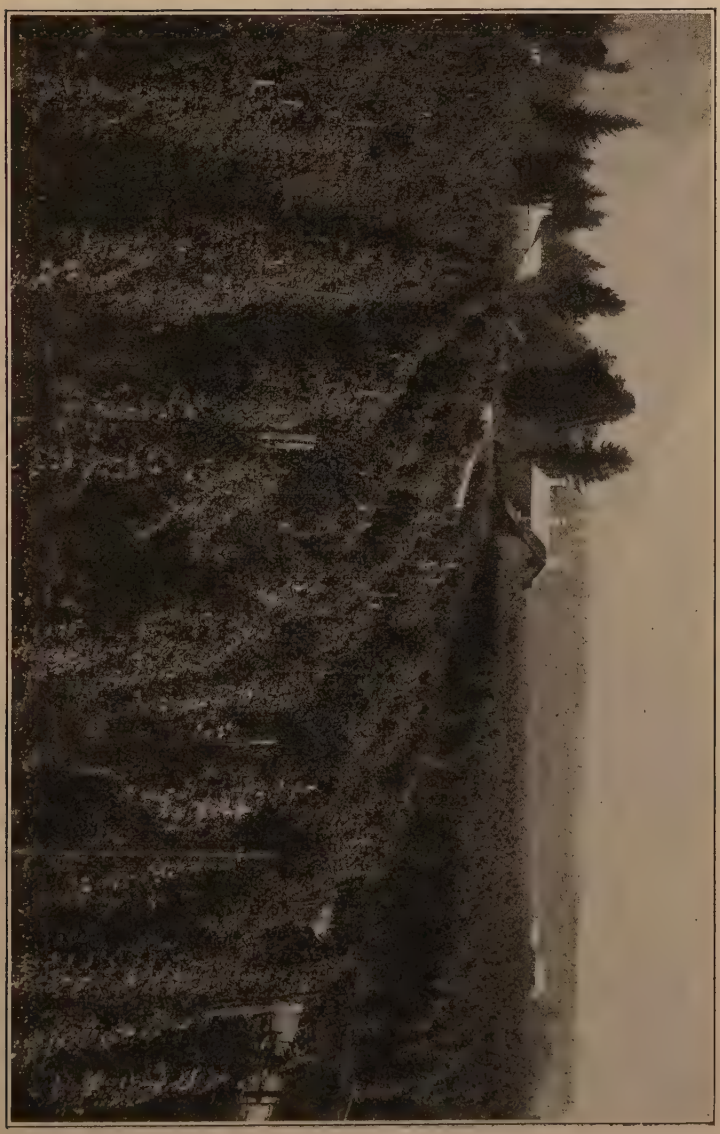
The Blue Mountains, which are a division of themselves, enter Washington from the south and extend to the Idaho line, occupying a very small area in the extreme southeastern part of the state. They have been very prominent in shaping the course of the rivers, but are only uplifted portions of the lava beds of the main plateau. The average height is about 6,000 feet, the highest peak being 8,000 feet.

Climate.—The Cascade Range is high and continues from north to south throughout the state. The prevailing winds are from the Pacific Ocean on the west and carry much moisture at certain seasons of the year. Owing to the fact that the Cascades form a barrier to the passage of the moist clouds eastward, a wide diversity of climate condition is created between eastern Washington, or the Columbia Basin, and western Wash-

ington, or the Puget Sound Basin. The waters of Puget Sound, the Strait of Juan de Fuca, Gulf of Georgia, and the Pacific Ocean together have a wonderful equalizing influence upon the temperature, producing a milder and far more equable climate than is usual in other regions in the same latitude. In western Washington the range of the mean temperature for the year is 35° in winter and 65° in summer, or an annual mean of from 50° to 52°, while in eastern Washington it is from 25° in winter to 70° in summer.

In the Walla Walla country there are hot summers and mild winters, with little snowfall, and short periods of moderately cold weather. In the Palouse country and Yakima and Klickitat counties the summer weather is hot and the winters are colder, but with more snow. In Spokane County, the Big Bend country, and Okanogan County, still farther north, all on the east side of the Cascades, the summers are short and hot, and the winters have some cold weather. Spokane has a record of 20°. In the hot spells of summer temperatures of 90° and 100° are sometimes reached. Walla Walla has a record of 112°. The locality about Lake Chelan and the valley of the Okanogan has a phenomenally mild winter climate. Lake Chelan never freezes. The mean temperature of Walla Walla and the lower Yakima Valley is from 53° to 54°, ranging from 31° in January to 76° in July; Spokane from 46° to 48°, or from 24° in January to 68° in July; Colville, in Stevens County, has a mean temperature of 45°; Klickitat County, next to the Oregon line but east of the Cascades, from 50° to 52°; Kittitas, the upper or westerly part of the Yakima Valley, from 44° to 46°. West of the Cascades the temperature of the hottest days rarely exceeds 90°, and on the coldest days of winter seldom reaches zero, and then only at the coldest stations. The warmest counties are Pacific, Lewis, Clark and Cowlitz, and the whole of the upper Sound region. The lower Sound region and the straits are cooler, the mean temperature being from 46° to 48°. Cool summers and mild winters in western Washington are very apparent. The highest temperature at Seattle is 93° and the lowest 3°. At Tacoma there is an annual mean of 50°, ranging from 38° in January to 64° in July. Western Washington as a whole has about the winter climate of Maryland, Virginia, North Carolina, and Tennessee, while the summer climate is that of Maine, Vermont, Northern Michigan and Canada.

The winters in eastern Washington are neither rigorous nor



A WASHINGTON HOP FIELD.

long, and there is no cold weather except when the winds come from the north or northeast, the air being dry; the few hot days of summer are not uncomfortable. Eastern Washington as a whole has a similar winter climate to New York, Michigan, Illinois and southern Iowa, and a summer climate similar to that of New York, Michigan and Minnesota, though considerably dryer.

The southerly and westerly winds are prevalent in winter and very mild. The name "Chinook" has been given to this warm, balmy wind, which, rising after every cold spell, dissipates the snow fields as if by magic in the eastern part of the state, leaving but little water upon the ground. This phenomenon is explained by the fact that the wind, having lost its moisture on the west side of the Cascades, comes to the eastern territory over a high elevation and descends into the valley as a dry wind. The north and easterly winds in winter are cold and cause much of the snowfall. The opposite of this is true in summer. The southwesterly and northwesterly winds are the prevailing winds of summer and are cool, while the northerly and northeasterly winds are hot in the daytime but cool at night. When the great plains east of the Rocky Mountains are hot during the summer, a wind from the northeast is hot; when they are cold in the winter a wind from that direction is cold. It is only when the Rocky Mountains fail to act as a barrier to the cold winds from the Canadian provinces that cold weather ensues.

The mountains produce the difference in precipitation in moisture. This precipitation is heaviest near the coast, ranging from sixty to 100 inches annually. This is called the wet district. Throughout the Sound region it is much less, but gradually increases as the country rises again to the higher summit of the Cascade Mountains. The precipitation here is from twenty-five to sixty inches and is called the moist district. The dry district is the northern and eastern portion of the state, in which the rainfall is from twelve to twenty-five inches, and the semi-arid region is the main Columbia Plateau, in which the rainfall averages about ten inches. The rains fall usually from November to April, not continuously, however, and a stray shower may fall at any time during the summer, even east of the Cascade Mountains. From the summit of the Cascades over the plateau region the rainfall is largely dependent upon the altitude, there being a regular decrease going eastward, until, on the low plain along the Columbia River, the

average precipitation for the year is but ten inches. Continuing eastward, as the country rises, in the most eastern part, the Okanogan Hills, the Palouse country and at the Idaho line, it is from twenty to twenty-five inches annually. It may be said here that a country having a rainfall of ten inches or less is considered arid, or semi-arid; an average of twenty inches is a good rain belt.

In the wet district are included the counties of Wahkiakum, Pacific, Chehalis, Mason, and the western halves of Jefferson

A PIECE OF WASHINGTON TIMBER.

and Clallam. In the moist district are included the counties of Whatcom, Skagit, Snohomish, San Juan Island, King, Kitsap, Pierce, Thurston, Lewis, Cowlitz, Skamania, and the eastern halves of Jefferson and Clallam. In the dry district are included the counties of Walla Walla, Columbia, Garfield, Asotin, Whitman, Spokane, Stevens, Ferry, Chelan, the greater part of Lincoln, the eastern half of Adams, the western half of Klickitat, the western third of Yakima, the western half of Kittitas, the northwest half of Okanogan, and a strip in the extreme western part of Douglas. In the very dry or semi-arid region, where crops cannot be successfully grown without irrigation,

are included Franklin county, the eastern two-thirds of Yakima, the eastern halves of Kittitas and Klickitat, the western half of Adams, the southwest part of Lincoln, the southeast half of Okanogan, and nearly the whole of Douglas county.

The number of clear days annually in western Washington averages 102 for a period of years, and in eastern Washington 152.

Resources.—The agricultural resources are varied and extensive, owing to the peculiarly favorable climate and general richness of the soil. Aside from the mountain regions, nearly all of the state is adapted to agriculture, but as yet only a small portion of the tillable land has been brought under cultivation. The soil of the Columbia Basin east of the Cascades is volcanic in character and very rich. It has been produced by the disintegration of the lava formations, pulverized to soil by action of the elements or the ice in former ages, and is of a dark color, often shading to a reddish brown where it has lain the longest undisturbed. In some places it is of great depth, even fifty or sixty feet. The soil of the valleys is composed of an alluvial deposit with the volcanic ash, and has an underlying bed of clay. On the high land the soil is more shallow, the texture is slightly coarser grained, is not quite so fertile, tills easily, works up mellow, and is particularly tenacious of moisture, holding enough in the dry region, gathered from the winter and spring snow and rainfall, to mature grain without further aid in summer. These lands comprise the immense wheat areas, and have long been cropped, producing abundantly. It would appear that this volcanic soil has all of the necessary mineral salts to produce a wide range of crops and that it apparently is inexhaustible. The arid valleys of the eastern slope of the Cascades are particularly adapted to horticultural products, and the arid plains are producing the cereals without irrigation, notably in Whitman and Lincoln counties, the latter being the banner wheat county of the United States. The total product of wheat in the state of Washington was 23,672,187 bushels in 1902. The average yield of wheat throughout the general wheat raising country has been twenty-three bushels per acre, which has yielded a good profit to the farmer, as there is a very large area which can yet be cultivated without the aid of irrigation, and by the adaptiveness of the soil to this cereal it would seem that the production would increase and continue for a long time to come. There are now about 2,000,000 acres planted to wheat

KLICKITAT COUNTY, WASHINGTON, WHEAT AWAITING SHIPMENT ON THE BANK OF THE COLUMBIA.

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on irrigated land. The system of cropping is different in many instances from that of the east; the most successful seems to be the system of summer fallowing, one-half of the farm being cropped every other year, the other half being plowed in the summer and allowed to clean itself. In this way the yield is nearly doubled, with the expense of only one harvest. Oats, barley, rye and flax all do well. A large portion of the wheat is exported to England and grades well with wheat from other parts of the world.

PATRONIZING A WESTERN CATERER.

On the western slopes the types of soil are entirely different, the most valuable, perhaps, being those found on the alder bottoms. This soil is a loose loam, very rich in organic matter, and when properly handled produces immense crops of almost anything the farmer may desire to grow. This land, however, is quite limited in area. Another class of land may be called semi-peat land, and there are extensive deposits of sand land. The sand is usually mixed with clay and grows all kinds of crops. The river valleys are well cultivated, being very rich. The rainfall makes hay a good paying crop and dairy conditions excellent.

Hops are raised with great success in the Puyallup, White, Snoqualmie, Nooksachk and other river valleys, and also in the Yakima Valley in eastern Washington. Enormous quantities of hops are produced and buyers come to purchase from foreign countries.

CUTTING DOWN A FIR TREE IN WESTERN WASHINGTON.

The soil and climate of eastern Washington are especially favorable to sugar beet culture. A factory has been established at Waverley, Spokane County, and it is predicted the production will reach 10,000,000 pounds annually. This industry just at present is attracting considerable attention.

Dairy farming is well established and has reached a stage of great commercial importance, the value of the various prod-

ucts for 1900 being considerably over $1,000,000. The business is well organized, is under the auspices of the State College of Agriculture, and is regulated by law. So much of the state being adapted to alfalfa, clover, which springs up in every clearing, and the different grasses, with plenty of clear water from the mountains, there is no reason why the dairy interests should not increase rapidly. The prices for all dairy products in Washington are good, as the demand is greater than the supply, a large amount every year being shipped in from the East. Root crops are not only profitable to the small gardener in every way, but are a great aid to the dairyman. The majority of the creameries of the state are located west of the Cascade Range, but there are dairy sections in the eastern part of the state, the Okanogan Highlands and the irrigated regions of Yakima and Walla Walla counties and the lower Palouse.

Stock.—Stockraising in the eastern part of the state has become extensive and profitable. Two-thirds of eastern and a large part of western Washington is adapted to grazing; cattle, horses and sheep are raised in large numbers, and Angora goats have been given a good start, with a promise of becoming very profitable. There is a fine herd of full-blood Herefords in Yakima County. The State Agricultural College also has the nucleus of a herd, and there are several small herds of Polled Angus in the state, and several large show herds of shorthorns, which strain is the largest represented. The famous bunch grass flourishes in the Okanogan Highlands to a marked degree, and further south on some of the other highlands east of the Cascades, but on the main plateau the wild, or natural growth, of vegetation is sage brush. The bunch grass has contributed much wealth to the business of stockraising. Large fortunes have been made in grazing sheep on the public land solely for the wool clipped, the same as has been done in many of the other states. Washington is adapted to sheep raising, but the settlement of the state is cutting up the ranges, as it is doing for the cattle man, so that the flocks are becoming curtailed; but of late years the sheep have been sold to good advantage for mutton, and the disposition is now to own smaller flocks of better bloods and give them better care. Washington has done quite a business in fattening hogs on wheat, alfalfa, and orchard windfalls. It is a common custom to turn hogs on the stubble after the grain is cut, and they often have no

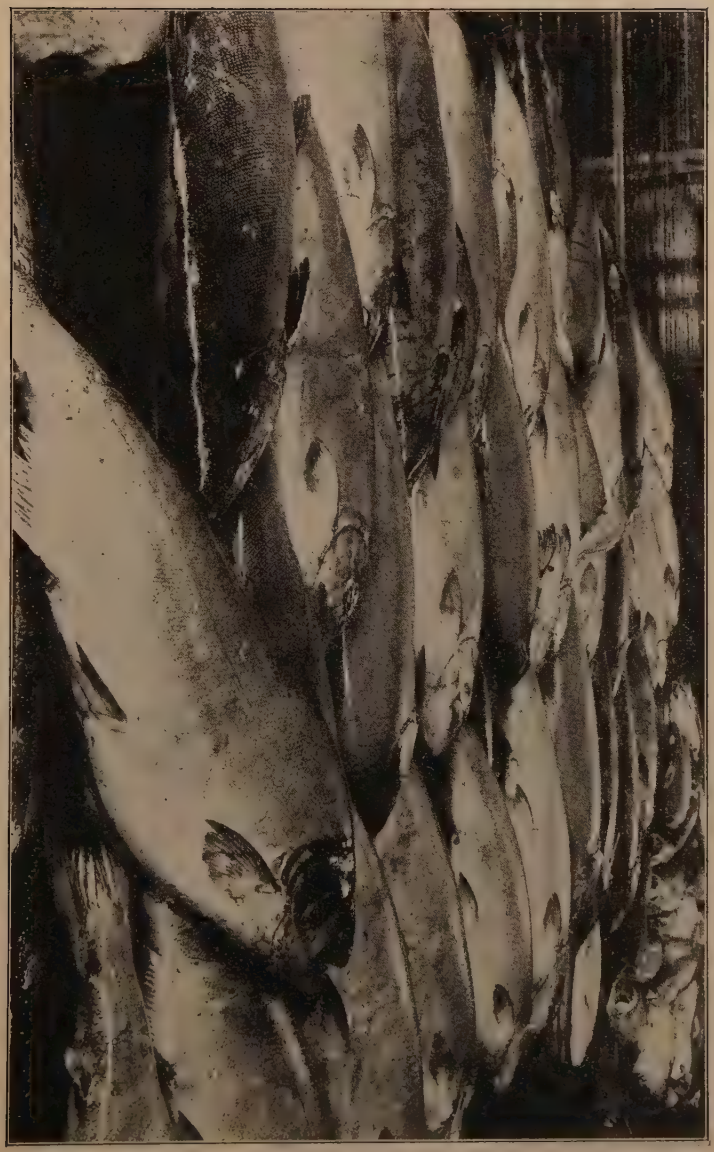
AERIAL LOGGING, OREGON.

other food than this and come out in good condition for market.

HORTICULTURE.—Throughout the greater portion of the state both climate and soil are highly favorable to horticulture, but the localities most widely known for excellence are along the Snake, Yakima, Wenatchee and lower Columbia rivers and Puget Sound. In every section the apple is the leading fruit. All the fruits common to the temperate zone are raised in western Washington, especially the prune, of which there are extensive orchards, and an abundance of high grade cherries. In eastern Washington peaches, apricots and grapes do well, as do prunes and other fruits. The climatic conditions are such, the temperature being free from the extremes of heat and cold, yet being sufficiently variable to afford nature the requirements to produce fruits of good size and flavor, as to make fruit culture a very profitable industry. In consequence the fruits of the state constitute a most important source of wealth.

The shot clay soils, where there is sufficient depth before reaching hard pan, sandy soils, with a proper mixture of clay, and the volcanic ash soils, with an admixture of sand in a moderate degree with sufficient water, are the leading soils for fruit culture. The soils of western Washington are usually high in phosphoric acid and nitrogen, but have a lower average of potash and lime than the soils of eastern Washington. On the other hand, the soils of eastern Washington stand high in potash and lime, but are much lower in phosphoric and nitrogen. Potash is generally the most important element to be applied directly to orchards, particularly after trees have reached bearing age. Available potash in the soil is much increased by tillage.

TIMBER.—The forests of the state constitute a most important source of wealth. They comprise nearly 50,000 square miles, or about seventy-one per cent of the entire land area, and extend from the Pacific Ocean to the Cascade Range, including the eastern slope and a portion of the state east and north, or the northern slopes of the Okanogan Hills. Near the summit of the Cascades, on the western slope, where the rainfall is greatest, the trees stand very close together on the ground, as straight as arrows, and run more than 100 feet to the first limb. It is estimated there is more timber in this state than in the combined states of Michigan, Wisconsin and Minnesota, and more than in all of the yellow pine states of the south. Professor Henry Gannett, Chief of the Division of Forestry, U. S., says that with the exception of the redwood forests of



ROYAL CHINOOK SALMON FROM THE COLUMBIA RIVER.

California, the forests of western Washington are among the densest, heaviest and most continuous in the United States. The trees are large, reaching from twelve to fifteen feet in diameter and to 250 feet in height. The timber is mainly red or yellow fir (Douglas), mingled with spruce, hemlock, and cedar. The total amount of timber in the state is estimated at 114,778,000,000 feet. Of this more than nine-tenths is west of the Cascade Range, the remainder being upon its eastern slope and in the northern and eastern part of the state. East of the Cascade Range the forests consist mainly of pine, and west of the Cascade Range the Douglas fir forms nearly two-thirds of the entire forest. The stand is heaviest in Skagit County; the next heaviest is in Wahkiakum County. In western Washington the average stand is 18,000 feet per acre; in eastern Washington it is but 1,200 feet. The entire area of the nineteen counties of western Washington is 24,900 square miles. Of this area, but little more than one-third is regarded as containing merchantable timber, twenty per cent has been cut, 22.5 per cent has been destroyed by fire, and the remainder, 57.5 per cent is still covered with standing timber. It appears that since lumbering began in this region there have been cut from it 30,000,000,000 feet, that destroyed by fire amounting to 40,000,000,000 feet, with about the same proportion in eastern Washington. Upon the west shores of Puget Sound, and as far southward as the Columbia River, as well as throughout the eastern slope of the Cascade Range, the forests are practically of Douglas fir. Spruce is most abundant immediately upon the coast; cedar increases westward, toward the coast, and reaches a maximum immediately on the coast, where it ranges from one-half to one-fourth of the forest. Hemlock forms quite a noticeable proportion of the forests in the coast ranges and in the northwestern part of the Olympic Peninsula. Professor Gannett's estimate of the standing timber of the state is as follows: Fir, 68,362,971,000; cedar, 16,309,453,000; hemlock, 14,848,259,000; pine, 6,586,520,000; spruce, 6,419,215,000; larch, 2,780,601,000; Oak, 3,700,000.

The fir timber is manufactured into lumber and shipped to California, Alaska, and many parts of the world by water. This timber has nearly as great a tenacity as oak; the cedar is manufactured into shingles and shipped to all parts of the United States, having gained a great reputation for durability. The other timber is used in various ways, and the hemlock is about to be used for tanning. The largest number of mills in the

state are located in Snohomish County. The total number of mills in the state at the last estimate was 444, with a daily capacity of 9,380,000 feet of lumber and 28,700,000 shingles. In the entire industries there were employed in mills, logging camps and allied industries, 24,000 men, receiving $14,260,000 in annual wages. The 1900 census gives the lumber traffic as follows: Domestic, water, and rail shipments, over 380,000,000 feet; foreign, over 155,000,000 feet; 270 shingle mills are making cedar shingles, with a daily capacity of 29,000,000. Shingle shipment for the year 1900 was 3,560,100,000. Exten-

DRAWING IN THE SEINE.

sive forest reserves have been made by the United States government, and the patrol of these will no doubt add to the safety of the present standing merchantable timber.

Mining.—Valuable deposits of the different metals exist in both eastern and western Washington, but so far the development has been slow as compared with other mining states. There are known mineral belts extending from the Blue Mountains to the northern counties and from Stevens County across to Whatcom and Bellingham Bay and all along the Cascades. In Stevens and Ferry counties, where the Republic Mines are located, in Okanogan, where active work is progressing, in

Chelan and in Kittitas, mines have been producing since 1872. Ledges have been found in Pierce, Lewis and Cowlitz counties. The Mount Baker and Slate Creek districts are very active, producing free gold with some tellurium. Skagit County has some promising silver and lead mines. Snohomish County has the copper belt, which is supposed to cross the state north and south, and new and large districts have been found at Mount St. Helens. At Monte Cristo a concentrator, capable of handling 250 tons per day, is now in operation. There are a large number of mines in this district. The Great Republic and other mines are located in the Miller district in King County. The great trouble in most of these counties has been the lack of transportation. When roads are built the mining industry will take on a new impetus. The iron in Skagit and Snohomish counties is very extensive. Excellent building sandstone is found in inexhaustible quantities north of Spokane and near the sound, notably at Tenino.

The state is rich in bituminous coal, and in 1902 there were mined 2,418,034 tons. It is of high grade and is shipped by water, largely to the south, supplying California and some foreign markets. At Roslyn, Kittitas County, there were employed 1,090 men in 1900, and the mines produced 867,204 tons. King County, with fourteen mines, produced 853,295 tons. Pierce County has six mines, which produced 595,605 tons. Skagit and Whatcom counties produced 56,830 tons.

Fisheries.—The fishing industry is one of the principal resources of the state of Washington, having in 1900 an invested capital of $4,362,470, employing nearly 8,000 persons, who earned $2,121,485. The value of the output was $4,357,753. The output has exceeded $6,000,000 in a single year. This, of course, refers to the salmon fisheries and canneries. The cannery at Fairhaven is claimed to be the largest in the world. The salmon migration to the spawning grounds, at the sources of the rivers, occurs during the spring, summer and fall months, a different variety running each season. Enormous schools of salmon then enter the Sound and rush up the river. The salmon are caught for the canneries chiefly in traps and with gill nets. The trap is a bewildering arrangement of piling, wire webbing, nets and ropes, to form the "lead," the "pot," the "tunnel," the "harts" and the "spiller," and must be seen to be understood. After they are in the trap, the salmon are "brailed" by steam into scows by hundreds,

which are towed to the canneries. They are put up in cans after being cooked, largely by Chinese help, and shipped to all parts of the world, London taking perhaps the largest share. The salmon is really the king fish of the Pacific Coast, but there are many other fish which are caught and shipped to San Francisco and other markets in the east. Halibut fishing off Cape Flattery is carried on very extensively. Shell-fish abound in the waters, and the oyster industry and the canning of clams is considerable. The native oyster beds are located at Olympia; the oyster is very small, very sweet and palatable, and is in

A WESTERN FREIGHT TEAM.

great demand. At Willapa Harbor and on the Sound eastern oysters have been planted and grown with success.

The State Fish Commissioner reports twenty-one canneries operating in Puget Sound in 1902, five on the Columbia River, Washington side; three on Willapa Harbor, and one on Grays Harbor. There were 7,615 whites and 2,055 Chinese and Japanese employed in the fish industry—which includes fresh, smoked and shelled fish—whose earnings amounted to $2,500,000. The total output was 777,484 cases, and the value $4,034,685. To avoid the depletion of the salmon, hatcheries have been established in the Puget Sound district on the Nooksachk, Skokomish, Samish, Snohomish, White, Nisqually, Stillaguamish and Dungeness rivers and the Columbia River dis-

trict at Kalama, Kalama eyeing station, Chinook, Wenatchee, Wind, Methow, Colville, Little Spokane, Klickitat, and on the coast, at Willapa and Chehalis. The number of young fry hatched and turned out in 1902 was 84,518,405.

COUNTIES.

Stevens County.—This county is the most northeasterly county of the state, and has an area of 3,800 square miles and a population of 10,543. It embraces a part of the Selkirk range of mountains of British Columbia, and its topography is broken by wooded hills and ranges. The county is divided into three districts. The Columbia River forms a greater part of the western boundary, its valley varying from three to fifteen miles in width. Here horticulture is practiced very successfully. The Colville and branch valleys extend through the center of the county, from three to five miles in width, and are noted for stockraising. Grain and fruit do well. In the eastern part of the county is the Pend d'Oreille Valley, which is noted for its natural meadows, and is very attractive to those desiring to enter the dairying industry. The scenic beauty of the Box Canyon of this river is unrivaled. Good government land on the benches and smaller valleys may yet be obtained. Timber is abundant, and sawmills are in operation. There are several water powers which can be developed. Kettle Falls, of the Columbia, which has a descent of thirty-five feet, with its immense volume of water, makes one of the largest water powers in the west. The Falls of the Pend d'Oreille have been utilized. Myers Falls, on the Colville, inside of one-eighth of a mile, descends 185 feet, and the main falls eighty feet. There is a sawmill and flouring mill at the latter falls, but otherwise they are undeveloped.

The Great Northern Railway extends the entire length of the Colville Valley, and continues north along the Columbia River to Nelson, B. C. It also crosses the Columbia River at the mouth of the Kettle River, and follows the latter to the boundary line and country on the new route to Vancouver, B. C.

The Metaline mining district, in the northeastern part, is the largest, though there is considerable mineral development in different parts. There is a smelter at Northport. The mineral region seems to be part of the rich Columbia district to the north. Marble and onyx have been discovered in paying quan-

tities near Valley and other localities. Perhaps no place in the Northwest affords the sportsman a better opportunity for hunting the mountain lion, cougar, elk, bear and deer, several varieties of each being represented; caribou are also found, and trout are plentiful. Colville, the county seat, is an important mining center, and has churches, a bank, a newspaper and several sawmills. Population, 1,060. Clayton is the seat of a large pottery establishment, Northport of a smelting plant, while Kalispell and Colville have creameries.

Ferry County lies along the boundary line west of Stevens

INDIAN CAMP, SPOKANE RIVER.

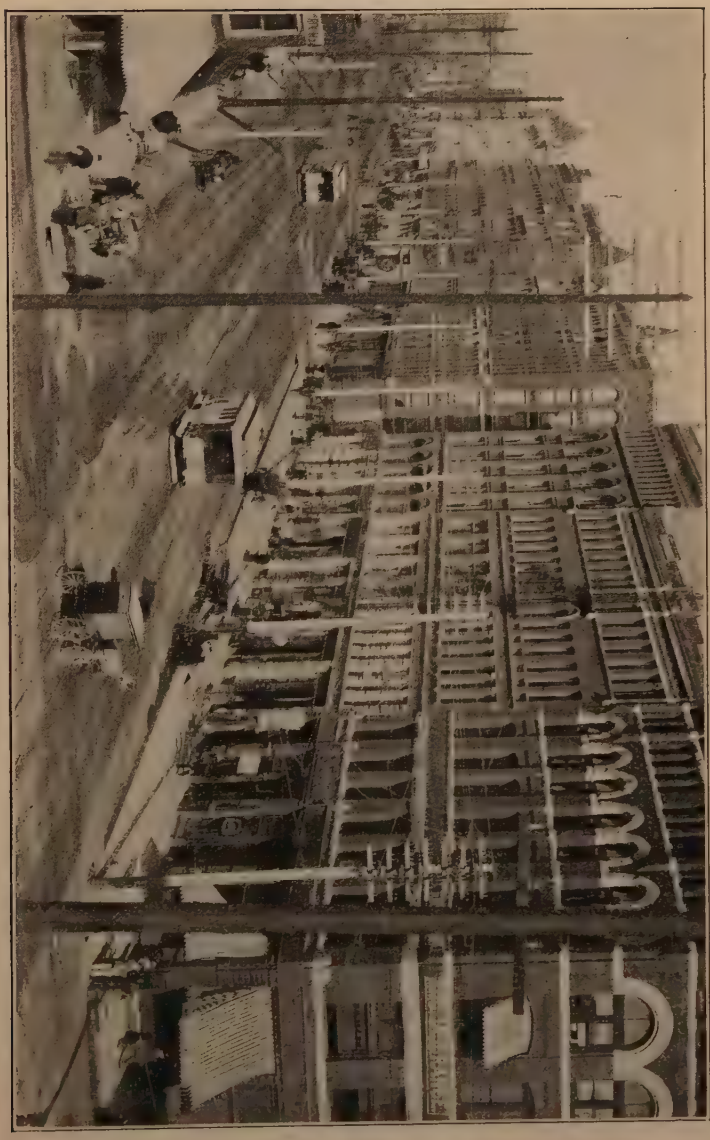
County, and has a population of 4,552. The county is mountainous; the chief industry has been mining, and the section is very rich in minerals, the Republic district being especially celebrated. The Great Northern has been built to Republic from Grand Forks, and mining has received a great impetus. The southern part of the county is still in the Colville Indian Reservation. The Sans Poil River runs south to the Columbia through a considerable part of the county, many small streams run eastward to the Columbia, and the Kettle River, coming in from British Columbia, drains the northern part of the county, makes a big bend, passing out again and then returning, thus forming the eastern boundary to the Columbia River. The

Boundary Country, north and south of the boundary line, is rich in minerals and has some good agricultural valleys, especially along the Kettle River. All cereals are grown, and bunch grass affords good pasturage. Grand Forks, on the Great Northern, the junction of the branches of the Kettle River, is the most promising town, while Republic, the county seat of Ferry County, is the liveliest place in all the upper territory and has a population of 3,318.

Okanogan County.—This county lies along the boundary line between Ferry County and the summit of the Cascades on the west. It has an area of 4,300 square miles and a population of 4,089. The southern half of the county is still included in the Colville Indian Reservation, but is open to mining. The two main rivers of the county are the Okanogan, which is quite a large river, rising in British Columbia and receiving the Samilkameen soon after they each enter the United States, and running nearly in a southerly direction to the Columbia; and the Methow River, which rises in the Cascades, near the boundary, and runs in a generally southerly course, entering the Columbia below the mouth of Okanogan on the west. The county for the most part is mountainous, and its wealth consists chiefly in its mineral deposits, its timber lands and its stock ranges. It has considerable timber, consisting of pine, fir, cedar, larch and tamarack; the foothills of the Cascades are heavily timbered. The valley of the Okanogan River embraces about one-third of the county. The tillable lands consist of the river bottoms proper and the benches, which are very fertile; irrigation is required in the valley, but the high lands in the eastern part of the county have sufficient rain. Several mines are being operated in the county, and many others will be developed as soon as the proposed extension of the Great Northern Railway is made up the valley of the Columbia River. On the Twitsp River, a branch of the Methow, good coal is found.

Conconully, the county seat, is now reached by Columbia River boats from Wenatchee and connecting stage lines. In addition to the proposed Great Northern line referred to, another line contemplated is through the northern part of the county, crossing the Okanogan River at Oroville and continuing up the valley of the Samilkameen. This would traverse the line of Bonaparte Creek.

As only the north half of the Colville Reservation, occupying the north half of Ferry and Okanogan counties, is open to settlement, it will be treated with the county. This territory



RIVERSIDE AVENUE, SPOKANE, WASHINGTON.

is about seventy miles in length, east and west, and about thirty-five miles north and south; the eastern half is mountainous and the agricultural valleys small; the western half is a combination of mountain, hill, tableland and valley, Mount Bonaparte being the center. The Okanogan Valley is 800 feet above sea level; the table lands have about 3,500 feet elevation. The soil is varied; in the valley it is generally sandy, being in some places a volcanic ash and in others a wash. Along the larger creek valleys it is a wash, often with gravel sub-soil; on the table-lands it is a deep, black loam, where bunch grass grows abundantly. The climate of the Okanogan Valley is mild in winter, but to the eastward it is higher, more moist and colder.

Spokane County.—This is the most easterly of the second tier of counties lying east of the Cascade Mountains. It has an area of 1,680 square miles, and a population of 57,542. Its topography is hilly in the southern and broken and mountainous in the northern part, with numerous streams flowing through deep ravines. Its principal stream is the Spokane River, which rises in Idaho, runs in a generally northwest course to the Columbia, and at Spokane descends in a series of falls, affording a magnificent water power. The southern portion of the county is well adapted to agriculture and a large acreage is devoted to wheat raising. Horticulture is an important industry, several thousand acres being set out to orchards, which produce a fine quality of fruit. There are about 75,000 acres of irrigated land in the county, mostly near the city of Spokane. Horse and cattle raising and dairying are important industries. Two creameries in the county manufactured in 1900 nearly 300,000 pounds of butter and 138,000 pounds of cheese.

A remarkable feature of this county is Medical Lake, which is situated at an altitude of 2,800 feet, and is a very popular resort, owing to the medicinal qualities of its waters. The Eastern Washington Hospital for the Insane is located here. This lake is reached by the Northern Pacific.

The Great Northern Railway and the Northern Pacific traverse this county from east to west, and a branch of the Great Northern runs to Nelson, in British Columbia, and to the Boundary Country. The Oregon Railway & Navigation Company connects Spokane with the Oregon Short Line at Huntington and the Southern Pacific line at Portland, Ore.

At Cheney is located the State Normal School, and at Waverley is the only beet sugar factory in the State of Washington.

FALLS OF THE SPOKANE RIVER, SPOKANE, WASHINGTON.

Spokane is the county seat of Spokane County, and has a population of 36,848 (1900), being the third largest city of the state, and the distributing point for all the country between the Rocky and Cascade Mountains, thereby earning its title of the "Metropolis of the Inland Empire." In 1872 it was nameless, with a population of three squatters and a few men who worked in a primitive sawmill. Today it has a population of 50,000 people, is handsomely built, well lighted and possesses prominent modern business blocks, fine hotels, manufacturing establishments, ninety miles of graded streets, the main thoroughfare being paved with asphalt; forty miles of street railway, twenty-three bridges spanning the river, nineteen school buildings, high grade schools, private colleges, two daily newspapers—morning and evening—which have a wide circulation; nine weeklies and six monthlies. All the religious denominations are represented. Its magnificent water power has been developed and is capable of operating many large factories. Electric power is furnished large flour and sawmills, iron works, foundries and factories, and is also transferred to the Coeur d'Alene mines and other places a hundred miles distant.

The city is situated in a beautiful valley 1,900 feet above sea level, and is as much a residence as it is a manufacturing and jobbing city. The climate is very healthful, the highest temperature being 104°, in 1898, and the lowest of later years 13°, in 1896, or a mean of 48°. The annual average precipitation was 18.17 inches. The city has been prosperous agriculturally, commercially and in the mines, the Inland Empire producing annually $25,000,000 from its mines and nearly $20,000,000 from its wheat. The Interstate Fair, which is held annually at Spokane, bears evidence of the high-grade products of the territory.

It is estimated that during the month of March, 1902, 10,000 people came to the Inland Empire to look for homes, and that during the month of April of the same year 6,830 stopped at Spokane. Much land has been taken up, but it is estimated that there is a large amount yet lying in Douglas and Okanogan counties which is available.

The magnificent water power in the heart of the city, with the mines to east and the north and the Palouse and the Big Bend countries to the south and west, certainly promise Spokane a bright future. It must be the railroad center, the banking center and the commercial center of this region.

MISSION, WASHINGTON, ON THE WENATCHEE RIVER.

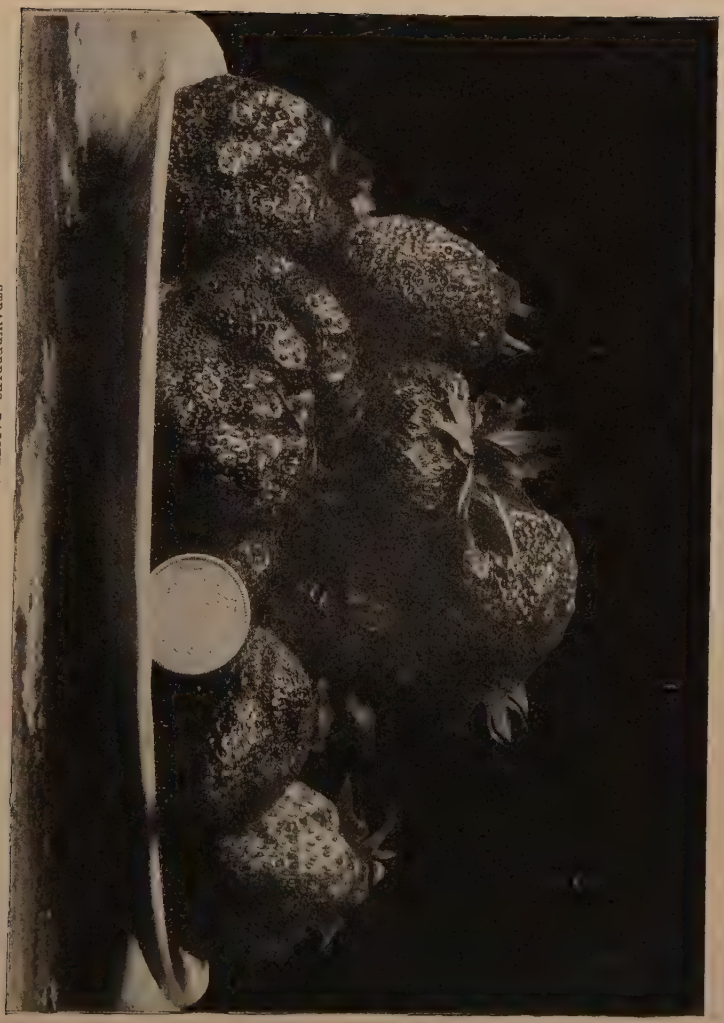
Lincoln County.—This county lies west of Spokane, has an area of 2,300 square miles and a population of 11,969. The county is traversed by the Great Northern and Northern Pacific railroads. The southwestern part of the county is comparatively level, but near the Spokane and Columbia rivers there appear many ridges that are covered with timber. The soil is good in all parts of the county, and splendid crops of wheat, oats, barley, rye and the other cereals and the hardier fruits are grown. This county divides with Whitman County the title of being the banner wheat county of the United States, each having alternately produced the largest crop, the crop for 1902 being estimated at 7,500,000, or about 900 bushels for every man, woman and child in the county; this would be about $450 per capita.

Davenport, the county seat, is situated on the Northern Pacific Railway, and has a population of 2,000. Other towns are Wilbur, Odessa, Harrington and a number of smaller ones.

Douglas County.—This county is situated west of Lincoln County, has an area of 4,500 square miles, and a population of 4,926. It is a prairie county, the eastern part being a high, level plateau of about 2,500 feet elevation, with a mild climate and a sufficient moisture to raise crops without irrigation. In some parts of the county water cannot be obtained except at a considerable depth, and not long ago large areas could have been bought for a song which today are bringing $10 per acre, and are raising bountiful crops.

The two coulees traversing this county from northeast to southwest, the larger one being known as Grand Coulee, and extending for a distance of sixty miles, with walls from 200 to 1,000 feet in height and from three to five miles in width, are topographical features which attract widespread attention. It is the geological theory that these coulees are the prehistoric beds of the Columbia River. There are many interesting things to be seen in Grand Coulee; among them is the Steamboat Rock, which resembles a steamboat, and rises 1,000 feet in the air, being three miles in length and a half a mile in width. Near the head of the coulee is Soap Lake, about a quarter of a mile in width, with water most beautiful to the sight, but very repulsive to the taste. It will cleanse soiled clothes without soap, and seems to have some remarkable medicinal qualities.

This county is the very heart of the basaltic region, and in many places where its cliffs are picturesque it looks uninviting from an agricultural standpoint. The soil is disintegrated lava,



STRAWBERRIES RAISED IN THE WENATCHEE VALLEY.

and has the characteristic of producing a crop of from twenty-five to fifty bushels per acre without rain from seed time to harvest. The soil in many instances here is sixty feet in depth. In the southern part of the county on the lowlands large herds of cattle and horses graze. This should make a good section for irrigating. All the valleys bear fruit, and there are many fine orchards. There is an opportunity to obtain some government land in this county or to buy cheap lands at second hand in the western part. The Great Northern Railway crosses the whole county from east to west, and the Northern Pacific branch is extended westward from Spokane to Pilot Rock, near the center. This county and Lincoln County, with Franklin and Adams to the south, are known as the Big Bend Country. Waterville, the county seat, is situated in the western part of the county, six miles from the Columbia River, and is reached by stage line from Wenatchee. It has a sawmill, bank, graded school, three weekly papers and a population of 875.

CHELAN COUNTY.—This county lies mainly west of Douglas County, has an area of 2,000 square miles, and a population of 3,931. It lies on the eastern slope of the Cascade Mountains, extending down to the Columbia River, covering Lake Chelan and the Entiat and Wenatchee valleys. The latter valley is used by the Great Northern Railway in making the rise from the Columbia River to the summit of the Cascade on its way to Puget Sound.

The Wenatchee Valley is famous for its fruits and vegetables. The orchards produce very large and perfect fruit, including apples, apricots, peaches, grapes, pears and plums. These are shipped to Sound points, and as far east as St. Paul and Chicago. There is quite a snowfall in the foothills, but irrigation is required in the valley, where the soil is very rich, and the valley is well protected. There is ample water, and several ditches are diverted with other large ones. The high line ditch of the Wenatchee Canal Company takes water twenty miles above the mouth of the river, and is able to supply water for the entire valley lands. This ditch cost $175,000, has one tunnel 800 feet long and several long distances of flume. The valley contains about 50,000 acres of irrigable land, of which about 5,000 or less are as yet under cultivation. This valley has no frost, and raises peaches, melons, tomatoes and strawberries, and the earliness of the crops makes good prices. The lands under the ditch are being offered at from $150 to $200 per

FLUME OF THE HIGH LINE DITCH, WENATCHEE VALLEY, WASHINGTON.

acre; bee culture is coming into the valley, and tobacco promises to be a successful product.

The town of Wenatchee, situated at the junction of the Wenatchee and Columbia rivers, is the county seat, and is said to be within a mile of the exact center of the state. To-day it has a population of about 1,500. In 1902 it shipped 1,000,000 bushels of wheat, brought down the Columbia River by steamboat. To receive this and other freight there are large warehouses at this point, as the steamboating of the upper Columbia begins here. The city has a fine brick school building and courthouse, a 250-barrel flour mill, and some good residences. This being the shipping point on the Great Northern for a vast country to the north, as many as 1,000 boxes of fruit have been waiting at the depot for a shipment by express in one day.

Mission, a very romantically situated town on the Great Northern, sixteen miles above Wenatchee, is a great fruit center. This town has had a wonderful growth, and now supports several stores, a sawmill, a bank, etc. Leavenworth, farther up the valley, is the end of the Mountain Division of the Great Northern Railway.

The length of the Entiat Valley is about seventy-five miles, and one-half of its length is available for homes. The most of the land has been taken, but it can be bought for reasonable prices.

Lake Chelan lies in the foothills of the Cascade Mountains, is 1,075 feet above sea level, sixty-five miles long, with a width of from one to four miles and a depth of 1,500 feet, and its waters are as clear as crystal. This lake is becoming quite a noted summer resort, the grand scenery, high mountains, snow-capped peaks reflected in the water, and the ever-changing scene making a trip very enchanting. The lake is open to navigation at all seasons of the year, for it never freezes. There is a hotel at the head of the lake to accommodate the public, and there are also good camping grounds at various points and at the head of the lake within sight of the glaciers. The only level lands are near the lower end of the lake. The soil is very productive in everything, especially fruit, as the climate and its general sheltered condition make everything favorable to horticulture.

There is a wide mineral belt in this county, which bids fair to have great value in gold and copper. The lake empties into the Columbia through the Chelan River, which has a fall of 400 feet, with a tremendous volume of water, making one of

WENATCHEE, WASHINGTON.

the finest water powers in the country, and which is now being developed. Chelan Falls, at the mouth of the Chelan River, is a shipping point for Big Bend wheat. Lakeside is the foot of navigation on the lake. Chelan is on the river by the same name, and is an incorporated town. Stehekin is situated at the head of the lake.

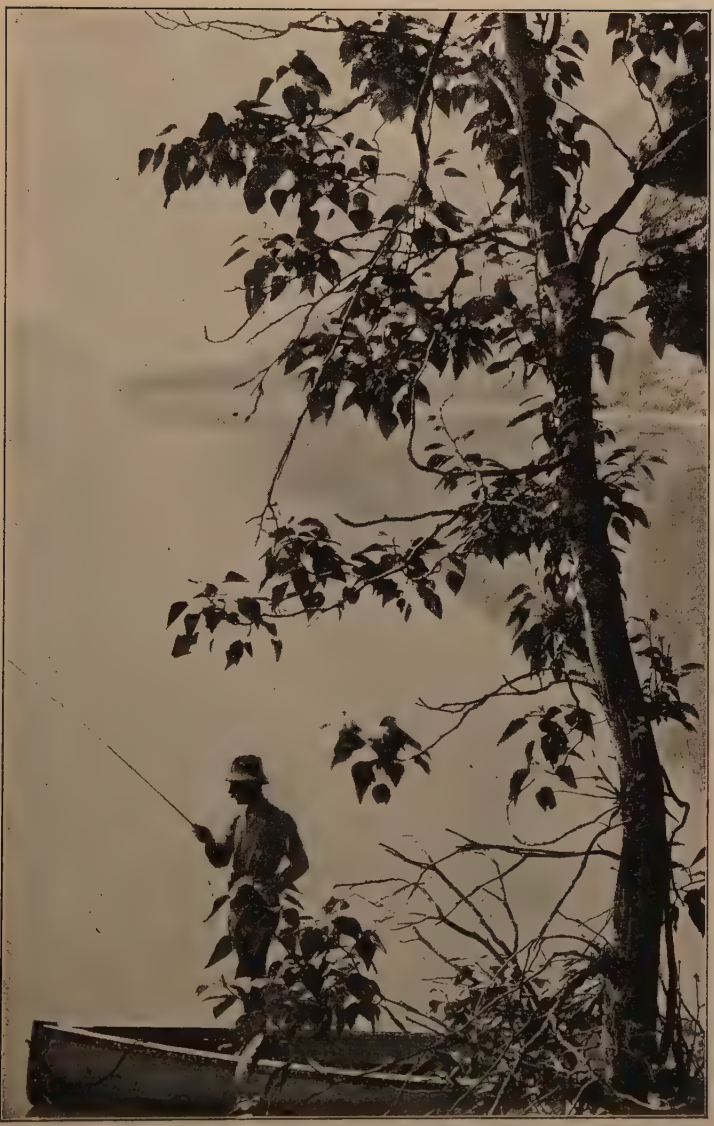
WHITMAN COUNTY AND THE PALOUSE COUNTRY.—Whitman is the most easterly of the third tier of counties, is bounded on the north by Spokane and the south by the Snake River, and, with Latah County, Idaho, covers the valley of the Palouse River, and forms what is known as the Palouse Country. The county was named for Dr. Marcus Whitman, the missionary, and has an area of 2,262 square miles. In 1900 it had a population of 25,360, but many settlers having since then come in, the population is now more than 30,000. Practically all the land is tillable, and more than one-half is under cultivation. The elevation in the western part is about 1,100 feet, gradually rising in the eastern part to 2,600 feet, which gives a rainfall ranging from twelve to thirty inches. The surface consists of an upland plateau, of rolling prairie or hills and valleys, which is far-famed for its wheat production, this county for a long time being known as the banner wheat county, which title it now divides with Lincoln County, in the Big Bend Country. Oats, barley, cattle, horses, hogs and fruit all do well, as do apples, prunes, plums, pears and hardy peaches. There are many thrifty orchards in this county.

Professor Dumas, of the Agricultural College at Pullman, gives the following as the cost of a four-year-old orchard, with land at $25 per acre, the trees commencing to bear at four years:

Land	$25 00
Compound interest four years at 8 per cent	9 00
	$34 00

FIRST YEAR.

Plowing and subsoiling	$ 2 50
110 trees	9 00
Staking and setting trees	3 50
Cultivating	75
Pruning	25
Compound interest four years at 8 per cent	5 76
	$21 76



LAKE CHELAN, WASHINGTON.

SECOND YEAR.

10 trees	$ 80
Setting trees	35
Cultivating	1 00
Pruning	1 00
Compound interest three years at 8 per cent	82
	$ 3 97

THIRD YEAR.

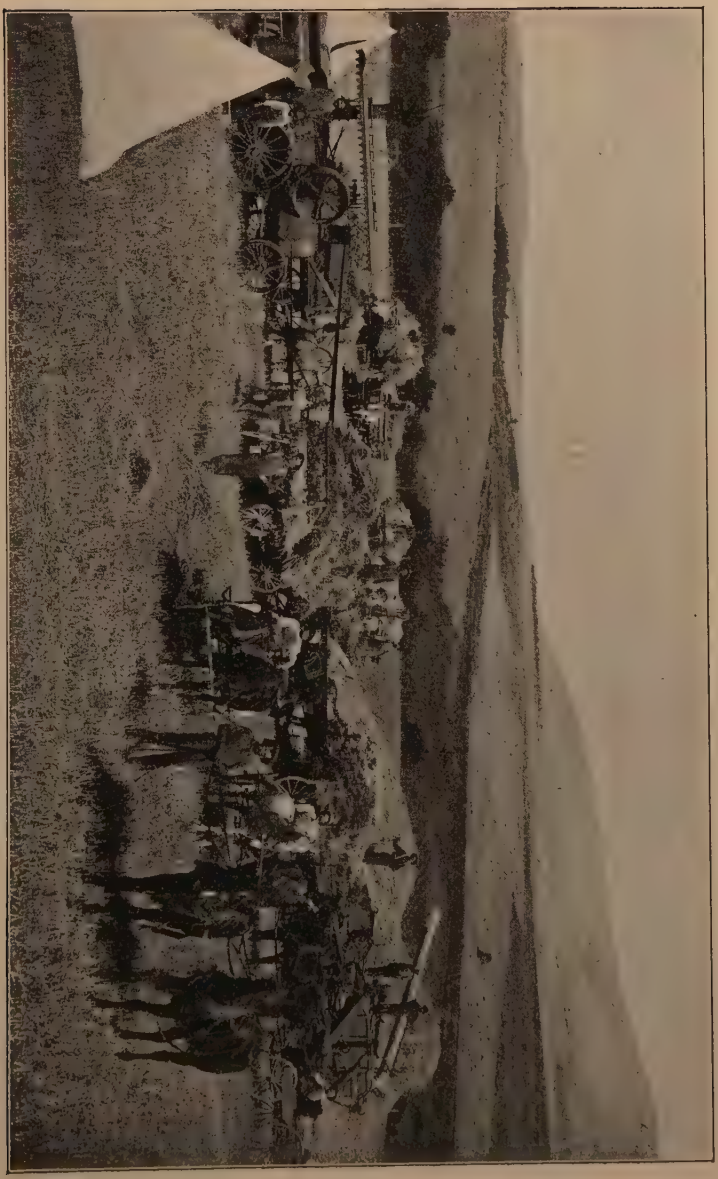
5 trees	$ 50
Setting trees	25
Cultivating	1 00
Pruning	1 00
Budding 55 trees	1 00
Compound interest two years	60
	$ 4 35

FOURTH YEAR.

Pruning	$ 1 50
Budding	1 00
Cultivating	1 00
5 trees and setting	75
Interest one year	34
	$4 59

Total cost per acre, $68.67.

This being the very center of the great grain fields, it may be well to state that everything here is done on a grand scale in plowing, sowing, harvesting and threshing, with a climate that admits of the harvest being continued and the sacks being left in the fields until the harvesting and threshing are completed. With these methods, the cost of raising wheat is much less than in the east, where it is stacked immediately in fear of rain. The Spokesman-Review gives the cost of raising wheat on the Columbia Plateau as seventeen cents per bushel and marketing five cents per bushel, or a total of twenty-two cents. But the average cost is generally figured at from twenty-four to twenty-eight cents. Wheat has stood in price in Eastern Washington at from forty-eight to fifty-six cents, so that the profit of the farmer has been about 100 per cent. The average yield per acre is given throughout the whole region, both good and bad, as 23.5 bushels per acre. Here it varies, spring wheat ranging generally from twenty to thirty bushels, in solitary instances much more. Winter wheat yields ordinarily much more than spring wheat, but sometimes the yield is reversed. The range is wide, twenty bushels being considered low, thirty good and forty very good, while both spring and winter wheat



HARVEST SCENE ON THE ROLLING PRAIRIE OF THE PALOUSE.

sometimes yield fifty and sixty bushels to the acre. Summer fallowed land produces nearly as much in one season as continuously cultivated land does in two. There is no question but that these favored regions of the Inland Empire surpass any other in the United States for the economical production of wheat.

W. J. Spillman, professor of agriculture at Pullman, says that the soil has been formed by the disintegration of lava or basalt, with which it is everywhere underlaid, and is wholly unlike anything in the east. In laboratory experiments he found that to saturate it with water it would absorb from forty-five to fifty per cent. This great capacity for water, which he says does not exist at depth, explains the apparent phenomenon of growing crops without additional rain from springtime to harvest. Professor M. W. Harrington, of the United States Weather Bureau, states that the soil is perpetually fertile, and that in the whole world he knows of but one locality which has a similar soil, and that is in the northern part of China, in the two provinces of Shansi and Shensi, west of Pekin. There it has been cultivated and has remained unchanged for 4,000 years. The United States Agricultural Department gives the wheat crop for 1902 of the three states as follows: Washington, 23,672,187 bushels; Idaho (estimated), 4,000,000, and Oregon, 15,512,460 bushels, or a total of 43,184,647 bushels. As the Agricultural Department has shown the wheat crop of the United States to be a little over 500,000,000, it will be seen that the crop of the Inland Empire, which produces most all of the wheat of the three states, is nearly one-tenth of that amount. Whitman and Lincoln counties are the largest, and produce nearly an equal amount. Walla Walla is third, Adams fourth, Douglas fifth and Spokane, which is the last of the million-bushel counties, sixth. The wheat is marketed in jute sacks, made mostly in Calcutta, but some being made at the penitentiary at Walla Walla, each holding, approximately, 140 pounds. The grain never leaves the sack from the time it is put into it on the field until it is delivered at its destination in the different foreign countries, most of it going to Liverpool.

The Oregon Railway & Navigation Company crosses this county from north to south, and is now building a line up the Snake River Valley. The Northern Pacific crosses the county from east to west. Colfax, the county seat, is situated on the Palouse River and the Oregon Railway & Navigation Company, and has a population at present of 3,500. It is a wealthy

CATTLE GRAZING ON ALFALFA, NEAR MISSION, WASHINGTON.

city, has good hotels, churches, a $60,000 waterworks plant, a Baptist college, fine courthouse and St. Ignatius' Hospital. At Pullman is located the State Agricultural College, and there are numerous artesian wells in this locality. Palouse and Farmington, in the extreme eastern part of the county, are rising cities.

Adams County.—This county is located directly west of Whitman County, south of Lincoln and Douglas counties, and partakes of the same characteristics, but it lies at a lower elevation, and consequently has less rainfall, ten inches being about the average. It nevertheless is fourth in the wheat producing counties of the state, and in 1902 produced nearly 3,000,000 bushels. Its soil is a volcanic ash, from one foot to 200 feet in depth. Colville Lake, in the northeastern part of the county, is a large reservoir, and can be used for irrigation purposes. The area of this county is 2,400 square miles, and it has a population of 4,840. Richville, the county seat, on the Northern Pacific, is a growing town, its population in 1900 being 761.

Franklin County.—This county lies south of Adams County, is of the same character, but still lower in elevation, the Columbia and Snake river valleys bounding it on the south and west, so it may be said that it is the very bottom of the Columbia Basin. It is a semi-arid county, but is seventh in production of wheat, coming next to Spokane. Its volcanic soil shows its moisture-holding qualities, when its wheat crop reaches three-quarters of a million bushels, with less than ten inches of rainfall annually. Along the river valleys are splendid alfalfa fields and fine orchards, where irrigation is in progress. A branch of the Oregon Railway & Navigation Company connects with the Northern Pacific Railway at Connell. The Northern Pacific Railway runs north and south through the county, crossing the Columbia River at Pasco, the county seat, which is the only town of any size in the county.

Yakima and Kittitas Counties.—These counties lie between the Columbia River on the east and the summit of the Cascade Mountains on the west. Kittitas County is bounded by Chelan County on the north. The counties cover the entire valley of the Yakima River and its tributaries, and topographically they consist of valley table lands and rolling hills, sloping from the hills to the mountain summit. Spurs of the Cascades divide the main valleys into smaller valleys, each being supplied with a mountain stream. The mountains are covered with timber, and the valleys with bunch grass and sage brush. Ya-

kima County has an area of 5,500 square miles and a population of 13,462; Kittitas, 2,000 square miles and a population of 9,704. The Northern Pacific Railway traverses these counties with its main line along the Yakima Valley in a northeasterly direction, making the ascent to the summit of the Cascades and Stampede Tunnel, elevation 3,698 feet. The soil is a volcanic ash, with some wash soil mixed.

In these counties irrigation has been practiced for some time. Originally the valley was a great cattle range, but irrigation today has changed it to numerous farms, with diversified crops of alfalfa, hops, fruits, wheat, tobacco, sorghum and vegetables. Though Whitman County takes the lead in horses and cattle, Yakima County takes the lead in sheep, in 1900 138,222 sheep being grazed on its ranges. Between the Yakima River and Klickitat County, near Prosser, is a high table land, covered with bunch grass, which is called Horse Heaven. Water cannot be obtained under 400 feet, so it is still used as a great range. The irrigation ditches already perfected, of which the Sunnyside is the largest in Yakima County, and the large one in Kittitas, projected at a cost of nearly $500,000, will enable the people to live from small farms, thus giving better care to the land and receiving better results. Fruit growing here has already reached wonderful perfection. The fruit is very large and sound and brings good prices. Every variety is successfully grown, and the orchardists are becoming rich from this product. The Yakima Indian Reservation occupies a large share of the southwestern part of the county. The Yakimas

YAKIMA CANYON AND RIVER.

are a very unthrifty race, but have lately leased water rights and are beginning to accomplish something.

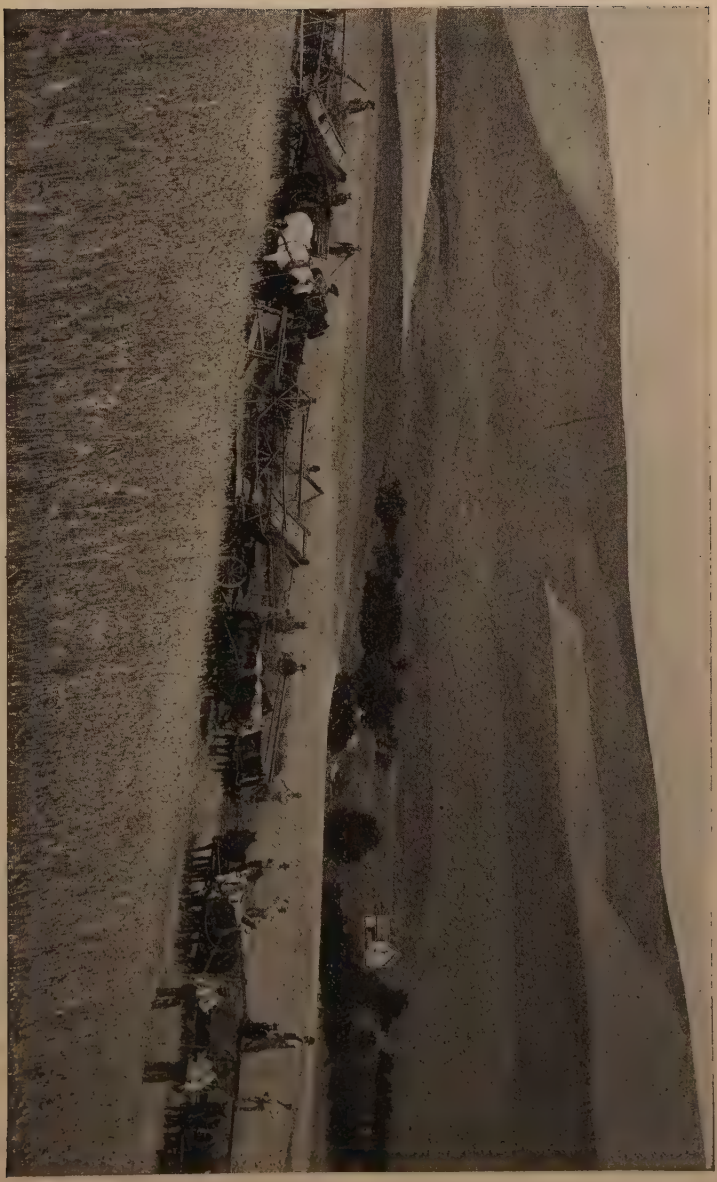
There are ten creameries in the two counties, which in 1900 manufactured three-fourths of a million pounds of butter. There are a number of promising mining districts located along the Cascades, especially in Kittitas County. The famous Cle-Elum coal district and Rosslyn mines have been spoken of in the general matter, also the iron mines.

Ellensburg is the county seat of Kittitas County, on the Yakima River and the Northern Pacific Railway. It has an electric light plant, street railway system, rolling mills, sash and door factories, sawmills, etc. North Yakima, the county seat of Yakima County, is located on the Northern Pacific Railway near the river. It is the center of much business enterprise and diversified farming. It is growing and prosperous, and has a very metropolitan air. Seventy-five good buildings, many of them brick, were erected in 1902. The state fair is held there annually, the grounds being excellent, and it is said to have the best race track in the state.

Lands along the valley ditches devoted to fruit are worth from $100 to $300 per acre. There are quite a number of other towns in these counties of moderate size.

Asotin, Garfield and Columbia Counties.—These counties lie in the southeastern part of the state, Asotin bordering on Idaho and all three bordering on Oregon. Asotin has an area of only 640 square miles, and a population of 3,366; Garfield, 672 square miles and a population of 3,918; Columbia, 830 squares miles and a population of 7,128. These counties lie partially in the Blue Mountains, which are heavily covered with timber. The northern portions are prairie land, have a volcanic soil and raise large quantities of wheat.

In Asotin County water is taken from the Snake River and Asotin Creek for irrigation purposes. The large canal diverting the water from the latter creek irrigates a considerable portion of the valley which is known as Vineland, with headquarters at Clarkston. It is a land of homes, in the midst of profitable orchards and small garden farms. It is a very successful and rapidly growing community. The city of Clarkston, opposite Lewiston, Idaho, with which it is connected by a $110,000 steel wagon bridge across the Snake River, just above its junction with the Clearwater, is a prosperous town in this district. It supports a newspaper, a bank, a sanitarium, two general stores, besides other stores representing the different lines, five



HEADERS AT WORK IN THE WALLA WALLA COUNTRY.

churches, some handsome residences and a park system. This city is being built under certain regulations, one of which requires all residences to be set twenty-five feet from the street line, and another that no stores or shops of any kind are allowed on the residence streets. In addition to the open canal system, a pipe line waterworks system has been completed. In time, with its beautiful location opposite the Nez Perces hills, in the only wide part of the Snake River Valley, Clarkston will be one of the most attractive towns of the Inland Empire.

The first orchard in this locality was planted in Asotin County by Chief Red Wolf, of the Nez Perces tribe, from tree sprouts given him by one of the missionaries. The Oregon Railway & Navigation Company is building a line up the Snake River Valley to this point. The river is navigated by boats throughout most of the year. Asotin is the county seat of Asotin County, situated on the Snake River at the mouth of Asotin Creek. It has a population of 774. The county seat of Garfield County is Pomeroy, which has a population of 953, and is reached by the Oregon Railway & Navigation Company. Dayton is the county seat of Columbia County, with a population of 2,216, and is also reached by the Oregon Railway & Navigation Company. All these counties have considerable stock, and Garfield especially has immense grain yields.

Walla Walla County is another of the southern tier of counties lying west of Columbia and bounded on the north and west by the Snake and Columbia rivers. It has an area of 2,000 square miles; its population in 1900 was 18,680. It is not only one of the oldest counties of the state, but one of the most prosperous. It was settled by the Whitman missionary party at Waiilatpu, seven miles from the present seat of Walla Walla, in 1836, and the site of the mission and scene of the massacre is now marked by a granite monument. The name Walla Walla is from the Indian, meaning "many waters," or "where waters meet." The Touchet River flows westward from Columbia County and the Walla Walla and tributaries from the south in the Blue Mountains in Oregon, all meeting in this county and flowing into the Columbia at Wallula. The country is gently rolling, sloping upward toward the Blue Mountains; the soil is volcanic, there is ample rainfall to insure crops, and the climate is mild in winter. It has been occupied and cultivated for a longer period than any other portion of Washington, and has really been the pioneer of the grain and fruit interests of the state. In early times it was entirely a

STEAMBOAT DISCHARGING WHEAT ON THE COLUMBIA RIVER.

stock-growing country, but wheat farming followed, from 3,000,000 to 5,000,000 bushels being harvested annually; today, however, 3,000 acres are devoted to fruit raising, with splendid results. One orchard alone consists of 1,000 acres.

In this county some records of "volunteer" crops of wheat are almost beyond belief. In one instance four crops were harvested, comprising respectively thirty-seven bushels, thirty bushels, twenty bushels and twelve bushels per acre, or four harvests amounting to ninety-nine bushels per acre in four consecutive years without seeding. Harvesting in Washington and Oregon is a wonder to the eastern man. An immense machine, driven by steam or drawn by thirty-six horses, heads, threshes, cleans and sacks at one operation forty acres of wheat per day.

The Blue Mountains occupy the eastern and southern part of the county. Walla Walla, the county seat, is located on the Oregon Railway & Navigation Company and the Washington & Columbia railroads, and in 1900 had a population of 10,047. It is a city in every sense, has fine houses, several educational institutions, good newspapers, a United States garrison, at Fort Walla Walla, and the state penitentiary. Witsburg has a population of 1,011 and an academic institution. There are about 250 miles of railroad in the county, consisting largely of the Oregon Railway & Navigation Company, the balance being the Washington & Columbia Railway, a branch of the Northern Pacific Railway.

KLICKITAT COUNTY.—This county lies west of Walla Walla, south of Yakima County, and has a shore line on the Columbia River for 120 miles. Its western boundary is practically the summit of the Cascade range. Many small streams flow through the county into the Columbia River on the south. The principal river is the Klickitat, which rises between Mount Adams and St. Helens. This river and its tributaries afford many advantageous water powers, and its gorge makes a pathway for the Columbia River & Northern Railway in its route from Lyle to Goldendale. The county has an area of 3,000 square miles and a population of 6,407 by the 1900 census. The Simcoe range of mountains separates the Klickitat Valley from the Yakima Valley, from which the country gently slopes each way. Although the northwest part of the county is mountainous, about one-half of the county is susceptible of cultivation and the balance is good grazing land. The part nearest the Cascades gets ample rainfall, while its eastern half is semi-

FAMOUS KLICKITAT INDIAN BASKETS.

arid. Klickitat is one of the largest wool-producing counties in the state. Its principal crops are wheat and other cereals, and timothy, with fruits, in the Columbia Valley. No irrigation is required, the soil is basaltic, but near the Cascades it has quite an admixture with loam.

The Camas Prairie and Trout Lake communities are noted for their cattle interests and their dairies, one of the latter making over 5,000 pounds of butter during the past year. This is the former home of the Klickitat Indians, celebrated for their romantic history and their baskets.

Goldendale, the county seat, is situated on the Little Klickitat River and on the Columbia & Northern Railway. In 1900 it had a population of 738, and now probably has double that

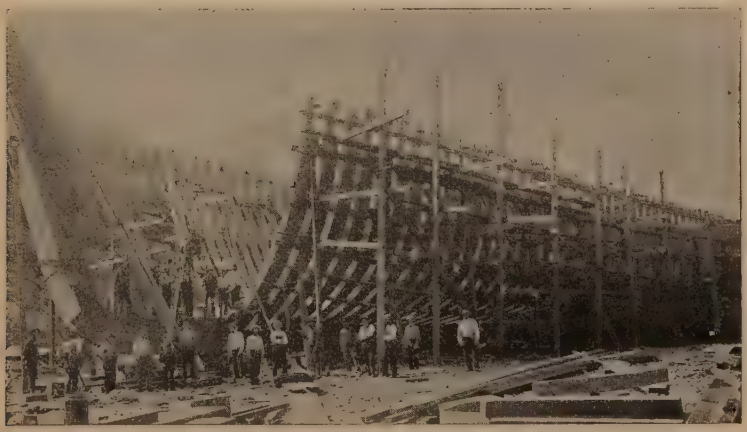
GOLDENDALE, WASHINGTON.

number. It is a very enterprising town, with banks, churches, good schools, an academy and two weekly papers. The river affords power for several saw and flour mills, and an electric light plant and waterworks are being established. There is considerable timber in the higher parts of the county. In going to Goldendale by all means get off at Lyle and go by rail. Do not, under any circumstances, attempt the stage line and sand from Biggs. There are a number of other towns in the county. Lyle, on the Columbia, is now the terminal of the Columbia & Northern Railway; connection is made here with the Regulator line of steamers. It is a good point. Prices of land in this county are very reasonable, and the Northern Pacific has some patented lands unsold.

WHATCOM COUNTY.—Beginning at the British Columbia line on the western side of the Cascades the first county is

Whatcom. This county extends from the Gulf of Georgia and Puget Sound on the west to the summit of the Cascades on the east. It has an area of 2,000 square miles, and a population of 24,116. The larger part of the county is mountainous. The Skagit River, which rises in British Columbia, flows south through the eastern part of the county, but the main river is the Nooksachk, which flows westward through the main part of the county into Bellingham Bay. The bottom land along this river is very rich and produces immense crops of hay, vegetables, hops and fruit. The second bottom lands make good fruit lands. The Sumas Valley is very level and fertile.

The great resource of this county has been timber, which has



SHIPBUILDING, WHATCOM.

been cut into lumber and shingles at Sumas and other places, but largely at Bellingham Bay. Mount Baker, always snow-clad, rears its head 11,100 feet above the sea, and is the great landmark of this county from all directions. In the Mount Baker district valuable minerals have been discovered, and mines and mills are in operation. The coal mines at Blue Canyon are well developed. There are sixty-three saw and shingle mills in the county, some of which have a large foreign trade. The fishing industry has developed to a remarkable degree, and is now one of the chief sources of revenue. The Pacific Navigation & Packing Company operates three canneries, with a capacity of 360,000 cases of salmon annually. These are con-

sidered the largest in the world. The county has fifteen canneries all told.

The Great Northern Railway, or Shore Line, runs northward through the county to Blaine, and continues on to Vancouver, which is the terminus. The Northern Pacific runs north and south through the county, connecting at Sumas with the Canadian Pacific. The Bellingham Bay & British Columbia runs east and west through the county, as a great logging and commercial road, and is now building up the north fork of the Nooksachk River. Steamers connect with the principal cities by water.

Whatcom and Fairhaven, with Seahome lying between, have a combined population of 14,000, and cover the entire shore

WHATCOM.

line of Bellingham Bay. Street cars connect the two cities, running every few minutes; they have electric lights and other improvements, while harmony exists between them in working toward a common end. The value of the lumber exports of this bay annually is over two and a half million dollars, and the salmon industry over one and a half million dollars, to say nothing of logs, coal and other products. The oyster business has been established, and shipbuilding has reached quite a stage, two yards being at present in operation. Besides a large tin can manufactory, there are brickyards, creameries, fertilizer works and other manufacturing interests operated on this bay, in all employing 4,207 men. Bellingham Bay has a fine harbor and enjoys a large commerce. Whatcom is the county seat.

Blaine is the most northwesterly city of the United States, and is situated on the Great Northern Railway and Semiahmoo Bay on the Gulf of Georgia. It has lumber mills, shingle mills, a crab cannery and five salmon canneries. This is one of the greatest of the salmon fishing districts, and many canneries are farther up on the Frazer River, there being forty-two within twenty miles of its mouth.

Near the beach on the north side of Blaine is an iron monument, four feet high and six inches square at the base, tapering to three inches at the top. On the north side of it are the words "Treaty of Washington." On the south side, "June 15, 1846." This marks the 49° of latitude and the final settlement of the boundary dispute. The boundary extends out to the main chan-

FAIRHAVEN AND WHATCOM.

nel in the gulf, thence down through Harro Straits to the Strait of Juan de Fuca, and from there to the sea. Other towns in the county are Nooksachk, Sumas, Enterprise and Wickersham.

Skagit County lies south of Whatcom County, and extends from the Sound to the summit of the Cascades on the east. It has an area of 1,800 square miles and a population of 14,272. The county is drained its whole length east and west by the Skagit River and its tributary, the Sauk. The valleys and the tide marsh lands at the mouth, known as the Swinomish flats, a large part of which have been diked, are the most productive lands in the county. On these flats are some splendid farms. In 1900 the county produced over one and a half million bushels of oats. Hops, hay, vegetables and fruits all flourish. This

is one of the richest agricultural counties in western Washington, and has the largest amount of standing timber.

The Skagit River is navigable for a considerable distance from its mouth, and the Northern Pacific Railway extends from Anacortes, on Fidalgo Island, to Hamilton, and also runs north and south through the county. The Great Northern runs north and south near the shore line. There are coal mines at Hamilton, also iron deposits of some value, and there is a good mineral zone in the southeastern part of the county. Sawmilling is the chief industry, but fishing has become an important factor. Several canneries are located at Anacortes, and there are nine creameries in the county.

Mount Vernon is the county seat, located on the Skagit River and the Great Northern Railway, and has a population of 1,020. La Connor is the oldest town in the county, with a population of 1,082. Anacortes has a population of 1,083. Sedro-Woolley is a railroad junction and mill town. Hamilton is a coal and river town.

San Juan County is composed entirely of islands lying in the Sound between Vancouver Island and Whatcom and Skagit counties. The area is 500 square miles and population 2,928. The principal islands are San Juan, Orcas, Lopez, Stewart, John's and Decatur. They are adapted to grazing, and have considerable agricultural land, marshes, etc. Dairying is very profitable, and fruits are raised in profusion. There is less rain here than in other parts of western Washington. The county seat is Friday Harbor, on San Juan Island. It has schools, churches and sawmills, and is the center of the lumbering and farming interests. Population, 400. There are twenty-six public schools in the county.

A controversy with Great Britain took place over these islands, and at one time open hostilities were begun. The forces on San Juan Island faced each other until the German Emperor arbitrated the matter, deciding that the channel ran west of this archipelago, and the English then evacuated Roche Harbor. Thus the United States secured a part of the beautiful Ionian Islands.

Island County is composed of the islands of Whidbey and Camano, located about the center of Puget Sound, across the head of the Strait of Juan de Fuca. They have an area of 145,000 acres and a population of 1,870. Both these islands are heavily timbered, but they afford a few thousand acres of agricultural land. This is a fruit paradise, some of the oldest or-

chards in the state being located on these islands. There are fourteen public schools in the county. Coupeville is the county seat, is located on the east side of Whidbey Island, and has a population of 495. Steamers call daily.

Snohomish County lies between Skagit on the north and King on the south, and extends from Puget Sound on the west to the summit of the Cascades on the east. It has an area of 2,500 square miles and a population of 23,950. It covers most of the valleys of the Snohomish River and its tributary, the Skykomish, and also the Stillaguamish rivers. The Great

ONE WAY OF BUILDING A HOUSE, NEAR EVERETT, WASHINGTON.

Northern Railway main line descends to the sea level at Everett from the summit of the Cascades by the Skykomish Valley. The chief industry has been lumbering, with some agriculture, but the growth of the cities has built up manufacturing, and the mines having been opened up, a different impetus has been given to the county. The Great Northern Railway not only extends east and west through the county, but follows the shore line from north to south. The Northern Pacific extends from north to south through the western part of the county, and a branch line from Hartford extends up the Stillaguamish Valley to the Monte Cristo mining district.

The fertile lands of the valley produce hops, hay, oats and vegetables; orchards are also being planted. There are fourteen dairies in the county, which manufactured in 1900 214,126 pounds of butter and 19,300 pounds of cheese. There has been greater mining development in this than any other county in Washington. It has the only shipping mines, with the exception of one in the Mount Baker district. The mining districts consist of Monte Cristo, Silverton, Sultan, Wallace and Index.

Everett, the county seat, is located at the mouth of the Snohomish River, on Port Gardner Bay, and had a population in 1900 of 7,838, which now probably reaches 15,000, including

ONE OF EVERETT'S MANY SAWMILLS.

Lowell and the smelter. The industries of Everett are many, and among them are included nine large sawmills, a flouring mill, a paper mill, three iron foundries, eleven shingle mills, six planing mills, a large smelter, an arsenic plant—the only one in the United States—large creosoting works, four shipyards, a wagon factory, an emery wheel factory, all running continuously, and, with the permanent forces of the railroads, giving employment to 2,350 men. The railroads have a payroll of $2,000,000 annually. Everett ranks third in the customs district of Puget Sound, which is the indicator of its commerce. In 1891 the first town lots were sold, and in less than ten years there was built up a city of 15,000 inhabitants, with enormous commercial interests.

Snohomish is the next important town, a flourishing city, nine miles above Everett, on the Snohomish River and the Great Northern Railway. It has a population of 2,001. Several saw and shingle mills are located here. Other towns are Stanwood, Monroe, Arlington, Marysville and Edmunds.

KING COUNTY lies between Snohomish and Pierce counties, and extends from the Sound to the summit of the Cascades on the east. This county is situated in about the center of the Puget Sound region. It has an area of 2,000 square miles and a population of 110,053 (1900). It was originally very heavily timbered, and is so yet in the eastern part. There is some agricultural land in the county adjoining the lakes and the Sound, while the uplands, when cleared, are adapted to fruit raising. The rivers are the Duwamish, White and Snoqualmie, the latter being a branch of the Snohomish. The products of the county are timber, coal, hay, hops, live stock, fruits and fish. The industries are lumbering, coal mining, hop raising, dairying, gardening and varied manufacturing. Coal mining has been a leading industry in the county since its infancy, millions of tons having been taken from its mines for domestic use and shipment. The output now is annually about 900,000 tons. Large deposits of iron ore exist in the mountains, and the county has within its borders good mineral zones now undergoing development. A very profitable industry is dairying, there being twelve dairies in the county, which, in

SNOQUALMIE FALLS BY MOONLIGHT.

1900, manufactured 772,068 pounds of butter, besides a large amount of cheese.

The railroad mileage is over 300 miles, consisting of the Great Northern and Northern Pacific and local lines. A very direct electric line has been established between the cities of Seattle and Tacoma, which gives many of the intervening towns light freight, as well as passenger service. Vashon Island, one of the large islands lying in the path of the steamers plying the upper Sound, is a part of King County. It has a population of several hundred people, engaged mostly in horticultural pursuits. Some fine homes are to be found here, and it is the seat of Vashon Baptist College. Maury Island, lying near it, also belongs to King County. Fishing has been a leading industry of the people of this county, and a source of much wealth.

Lake Washington, lying near the Sound, is a beautiful body of fresh water, twenty-two miles in length and from two to four miles in width. Between this lake and Lake Union and Salmon Bay a ship canal eight miles long is being built by the United States Government, at a cost of $3,000,000, to afford fresh water anchorage to seagoing vessels, together with additional dockage.

Snoqualmie Falls, twenty-five miles from Seattle, constitute a perpendicular fall of the river of that name for 268 feet, and the natural beauty is unexcelled. A power company has utilized these falls to operate electric car lines and manufacturing plants at Seattle and other adjacent cities. Its power ranges from 10,000 to 100,000 horsepower at different stages of water. There are other falls in the county which can be utilized.

On Green River are located the celebrated Hot Springs, sixty-three miles from Seattle, on the Northern Pacific Railway. These springs have a temperature of 132°, and are used medicinally. A good hotel or sanitarium building has been built, with excellent accommodation for guests.

Seattle is the county seat of King County, and the largest city in the state, with a population in 1900 of 80,671, which, there is good reason to believe, has been increased to more than 100,000. The site was located in 1852, and in 1853 a town was platted and named Seattle, after a friendly Indian chief. The city extends from Elliot Bay to Lake Washington on the east and north and south for several miles. Seattle is a city of hills, the country rising abruptly from the water front, but the wide

Since then the number of factories and products has increased largely, the number of operatives employed being estimated at 15,000.

The leading industrial features of the city are the shipyards and the sawmills.

The great shipbuilding plant of Moran Brothers Co., now almost rivaling those of the Atlantic Coast, has a business history of only twenty-two years. The company built its first steel ship in 1886, having previous to that time been engaged in wooden shipbuilding and general machine and foundry work. Its success in constructing vessels and their machinery has

SEATTLE SHIPPING.

been most gratifying, the work along this line including ocean vessels, wood and steel; tugs and tenders for the United States Government, river and sound steamers and barges. It has also delivered to the United States Navy one first-class torpedo boat, the "Rowan," which, considering the usual trouble experienced by all torpedo boat builders in this and other countries, may be said to have an exceptionally good record, as not only were the contract requirements fully complied with, but as to speed were exceeded by 1¼ knots, a remarkable achievement in torpedo boat building.

There are four steel vessels at present under construction at the works of this company, among which is the first-class

United States battleship "Nebraska," 15,000 tons displacement, and costing $3,800,000. A general idea of the magnitude of this work may be obtained from the following description:

The vessel is 441 feet long, seventy-six feet two and one-fourth inches wide at the water line and a total depth from keel to top of the upper deck of forty-nine feet nine inches. The main battery will include four twelve-inch breech-loading rifles, eight eight-inch breech-loading rifles and twelve six-inch breech-loading R. F. rifles.

Aside from the steel shipbuilding plant and the drydock, the company operates a marine railway, on which vessels are hauled out for cleaning and repair.

The general works include the following departments: Machine shop, sheet metal shop, joiner shop, pattern shop, iron foundry, brass foundry, electrical construction department, power plant, and drawing office. There are also large storerooms and warehouses, well stocked with all kinds of marine and engineers' supplies and raw materials for ship and general construction. The shop tools at the works are independently driven by either electricity, compressed air or hydraulic power, the company's power plant including large generators, air compressors and hydraulic pumps and accumulators.

This company also operates large saw and planing mills, where lumber of all kinds is manufactured for its use and for local trade and export shipments. These mills are particularly equipped to turn out long and large timbers, and a specialty is made of spars of large dimensions.

In addition to the above, the plant includes facilities for receiving and shipping materials or machinery which are unsurpassed, as the trans-continental railroads run by the works and have branch tracks extending through the shops to the deep water wharves. Weights of sixty tons are handled with ease by the electric traveling cranes in the shops, and weights of 100 tons can be handled by the stationary and floating cranes at the wharves.

Aside from the operation of its construction or producing departments above described, the company is constantly engaged in repairing vessels which call at the port of Seattle, and it is not unusual to see as many as from ten to fifteen vessels of all descriptions undergoing repairs at one time. During the war with Spain numerous vessels were fitted out very expeditiously by this company for the United States Government for the transportation of men and animals.

SS. NEBRASKA.

The storage capacity of the wharves, warehouses and elevators of Seattle's water front is 712,900 tons, and the berths for vessels alongside the wharves are sufficient to accommodate a line of vessels for a distance of four miles. Local development on a large scale is being carried on by the combined railroad companies, a new union depot having been located south of the business section of the city. A tunnel will be driven in a northerly and southerly direction under the city, which will give an outlet to the railroads and relieve the water front of its present congestion of railway tracks. Seattle's foreign and Alaska trade has of late years been very large, especially the Oriental trade. The Nippon Yusen Kaisha has nineteen vessels engaged between Seattle and the Orient; the China Mutual Line has thirteen vessels running to Liverpool and the Orient; the Globe Navigation Company has a line to Honolulu, and there are, besides several other lines, the general ocean sailing vessels, the Alaska and coastwise trade, which is carried on by a number of strong steamships, and the local business is conducted by what is known as the "mosquito fleet." Seattle shipments for 1901 are estimated at forty-six millions.

The wheat and flour exports have been simply enormous, and new flouring mills are now being constructed to supply the new demand for flour in China and elsewhere.

The city of Ballard is a flourishing manufacturing city, situated on Salmon Bay, adjoining the city limits of Seattle, and is connected with the city by the Northern Pacific Railway, the Great Northern Railway and by two electric lines. The government Lake Washington ship canal passes through Salmon Bay in front of the city, which has twelve shingle mills and four sawmills, with a payroll of $200,000 per month. It is noted as the largest shingle producing point in the world, besides having other manufactories.

There are many flourishing towns in the county, notably Kent, Auburn, Renton, Franklin, Newcastle, Bothel, Black Diamond, Enumclaw, Snoqualmie and others.

Pierce County covers the commercial head of Puget Sound, lies south of King County, and extends from the Sound to the crest of the Cascades on the east. It has an area of 1,800 square miles and a population of 55,515 (1900 census). This county has been very heavily timbered, but large portions of it have been cut and manufactured into lumber. There is still considerable timber in the eastern part of the county; some of

RESIDENCE STREET, TACOMA.

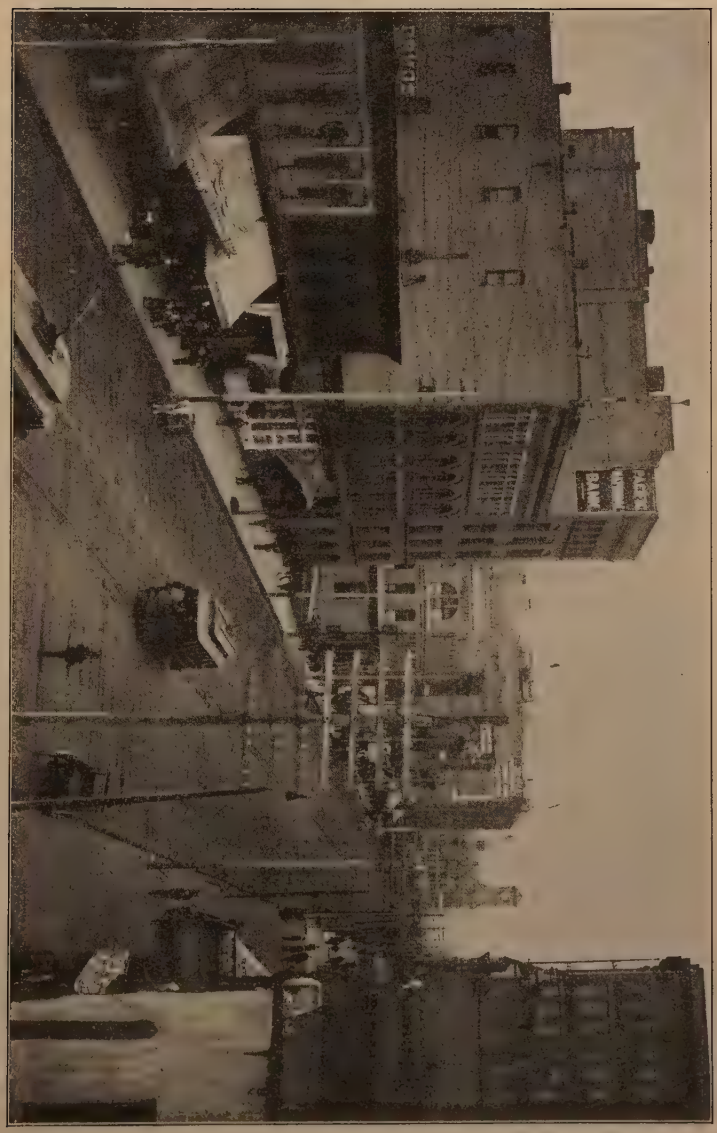
it, however, being inside the forest reserve and Mount Rainier National Park. There are some prairie lands in the western part of the county and in the Puyallup Valley, which for years has been noted as the hop center of Washington. These lands are very rich, and raise all crops in abundance. Apples, plums, prunes, vegetables and the cereals do well. Dairying has reached an important stage, there being fourteen dairies in the county, from which, in 1900, 270,270 pounds of butter were made.

The Puyallup River rises in the Cascade Mountains, with its various branches, has a generally northwesterly direction, and reaches the Sound at Tacoma. The Nisqually River bounds the county on the south and west, rising high up in the National Park, on the sides of Mount Tacoma. This mountain stands out in bold relief in the southwestern part of the county, the grandest mountain of all the Cascades. The government has thought this mountain, with its forests and its glaciers, a scenic feature of the country, and has therefore included it in a national park.

The resources of this county are timber, coal and agricultural products, though some mines for the different metals are showing up well. Coal mining is perhaps the leading industry, with timber second, the output of the former for 1900 being 600,000 tons. This coal is valuable for coking purposes, and the manufactured product is disposed of at the manufacturing centers.

The county is traversed east and west and north and south by the Northern Pacific Railway. Portland, Olympia, Gray's Harbor points and Seattle are all connected with Tacoma by the Northern Pacific, and an additional direct electric line also connects Seattle and Tacoma. The Tacoma & Eastern Railroad, now being built to the foot of Mount Tacoma, is expected to be ready to take passengers who desire to ascend the mountain in the course of a year. This road is being built for the purpose of hauling coal and timber, and opens a large and very rich area.

Tacoma is the county seat of Pierce County, and is situated at the head of Admiralty Inlet, the main estuary of Puget Sound, on Puyallup or Commencement Bay. It is the second largest city in the state, having, in 1903, by estimate of the names in the directory, more than 55,000 population. Tacoma is the western terminus of the Northern Pacific Railway transcontinental line, where the general offices of the company have



PACIFIC AVENUE, TACOMA, WASHINGTON.

been located, with terminals and docks costing $15,000,000. This road has also spent a large sum at South Tacoma in car building, locomotive repair and construction shops. These are the largest shops of the kind on the Pacific Coast, with the exception of those at Sacramento, Cal.

Tacoma is not only a sub-port of entry, but is the second largest wheat shipping point on the entire Pacific Coast. During 1902 the shipment reached more than eleven and a half million bushels and 1,400,000 barrels of flour, more than any other city on the coast. Tacoma is nearly 150 miles from the open sea, and is very advantageously situated. Her harbor has ample depth for all classes of shipping and will accommodate any sized fleet, while her wharf and shipping facilities are unexcelled. The largest private drydock on the coast is located here. In addition to numerous other warehouses, one warehouse alone is 147 feet in width and 2,360 feet in length. This is considered the largest of its kind in existence, and from four to eight vessels can be loaded from it at one time. Electricity is used in loading vessels, and this port has earned the reputation of loading quicker than any other port on the Pacific.

Ample coal fields at Tacoma's very door afford cheap fuel, besides, cheap electric power is furnished, which two economic features have brought to this city many manufacturing establishments, some of the largest on the Pacific Coast. Twenty-one of the establishments employ 4,446 men, or an average of over 200 men to each; in all there are 583 establishments, employing 7,878 men. Of these establishments perhaps the most important are the lumber mills, of which there are several of large capacity, the St. Paul and Tacoma Lumber Company being rated the largest lumber mill in the United States, and being second in the world only to the great lumber mill in Sweden. These mills manufactured about one-fifth of the lumber output of the state, or 304,000,000 feet, and in addition to this 350,000,000 shingles. During the year 136 vessels, loaded either wholly or in part with lumber, sailed for India, Africa, Siberia and Australia and for New England with spars.

A large smelter, the most complete upon the Pacific Coast, is in operation, and smelts ores not only from local mines, but from Alaska, British Columbia, the western states and South America. The most extensive packing and cold storage house on the Pacific Coast is located here and does a large slaughtering and shipping business. Besides these manufactures men-

SCENE IN THE LUMBER MANUFACTURING DISTRICT, TACOMA.

tioned, there are shipbuilding, carbuilding, match manufacturing and woodworking plants, as well as a multitude of smaller industries, claiming an invested capital of over ten million dollars, with a monthly payroll of $480,000 and a valued product for the year of $24,957,600.

Attending the meeting of the rails and the sails at this point is the immense development of the state, which in many ways has aided the growth of the manufacturing interests of the city in a very stable manner. Large quantities of the wheat raised in the interior have been manufactured into flour and shipped to the Orient, and there has been a local production of the minerals and by-products from many industries. Not only has iron ore been manufactured into steel and shipped, but cotton and other products of the farther confines of the country have been shipped to the Orient through this port, the returning vessels bringing tea, coffee, sugar and silk from other parts of the world.

Many vessels are required to carry these products, and of the entire fleet of the Puget Sound foreign trade twenty-one make their home at Tacoma, while ten others make Tacoma a port of call. These vessels constitute the lines of the Northern Pacific Railway, the Boston Steamship Company and two British lines, in addition to the many sailing vessels. During the year 1902 the number of vessels of all descriptions sailing from Tacoma for foreign ports averaged more than one for every day in the year, this not including what is known as the Puget Sound, or "mosquito fleet," nor the Alaska fleet.

To carry on these extensive enterprises in both manufacturing and shipping large capital is required; the bank clearances of the city in 1902 exceeded $75,000,000, which shows the magnitude of the transactions.

Tacoma, as a city, is remarkably well built, and its features are the beautiful homes, to be seen on every hand, and the many parks and sightly drives. Tacoma has more than 100 miles of graded streets, operates its own waterworks, the water supply coming from the streams along the sides of Mount Tacoma, thus insuring purity; also its own electric lighting plant; has a good street car service, and is connected with Seattle by a new and direct electric line in addition to the regular railway service. Several steamers also make the trip between the two cities by water daily, so that there is no lack of either boat or train accommodation at any hour of the day.

The city's educational advantages are many, for there are

VESSELS LOADING AT THE WAREHOUSES, TACOMA.

located here, in addition to the regular school system, four colleges, one seminary, two art, two industrial schools and other educational institutions.

Of the grand and beautiful sights of the world, that of Mount Tacoma, with its snow-clad heights mirrored in the deep blue waters of the Sound, and the city in the foreground, is one which will never fade from the memory of those who have beheld it.

One of the most interesting sights for the traveler in the Northwest is the Ferry Museum, of Tacoma. This occupies two floors of the county courthouse, and has the largest collection of Indian and Alaskan curios and Indian baskets in the world. These Alaskan curios are not only those which are gathered along the sea coast, but from many points in the interior which are seldom visited. The difference between these curios and others which the traveler sees will at once suggest the difference between the real and the imitation.

Thurston County is situated in the extreme upper Sound Country, and lies between Chehalis County, on the ocean, and Pierce County, on the east. It has an area of 700 square miles, and had a population, in 1900, of 9,927. It has many miles of shore line bordering on Puget Sound, with numerous bays and inlets, and is one of the leading fruit-growing counties of the state, the larger part of which is adapted to this product. There are many thousands of fruit trees, covering hundreds of acres, and bearing apples, prunes, pears, cherries, quinces, etc.

Lumber has been the great industry, there being now seventeen saw and shingle mills in the county, with a daily output of 300,000 feet of lumber and 600,000 shingles. It is estimated that one-third of all the logs shipped on Puget Sound comes from the forests adjacent to Olympia. The fish industry here is quite important, as this county is noted for its oysters, the Puget Sound bivalve having been given the name Olympia from the fact of this county being the center of the industry. The oysters are small, but very sweet, and have an especial flavor of their own much enjoyed by epicures. The express company books show that from Olympia were shipped 1,500,000 pounds of oysters, part removed from the shell, during the year, but this does not cover the gross amount, as large quantities were taken direct from the beds to Tacoma and Seattle. There are thousands of acres in the Sound's inlets now belonging to the state, which can be utilized for oyster beds, and the trade is constantly growing.

THE GREAT WAREHOUSES ALONG TACOMA'S WATER FRONT.

There are fifty-one creameries in the county, with an output of about three hundred thousand pounds annually. There are sixty-six public schools, six of which are graded. The Northern Pacific Railroad traverses the county with both its main lines to Portland and its line to Grays Harbor.

This county was settled very early. The settlement at Tumwater, adjoining Olympia, is the oldest west of the Cascades. The surface is rather rough and comprises low mountains, with valleys interspersed with broad plains or prairies. The best and most prosperous farming districts border the arm of the Sound, which penetrates this county in so many different

STATE CAPITOL, OLYMPIA, WASHINGTON.

places. The Chehalis River Valley crosses the extreme southwestern part of the county. Coal, not of high grade, is one of the products of Tenino and Bucoda. At the former place there is a fine ledge of building stone, perhaps the best in the state. Other towns are Rainier and Lacy.

Olympia is the county seat and the capital of the state. It is located on Budd's Inlet, the most extreme southerly inlet of Puget Sound. Its harbor will not accommodate the ocean-going fleet, yet it has sufficient depth for Puget Sound steamboats and vessels, which give regular connection with the other cities.

OLYMPIA, WASHINGTON.

The Northern Pacific Railway, between Tacoma and Grays Harbor, passes through Olympia, and the Tenino branch makes it a part of the main line to Portland. Through trains pass Olympia each way. The industries of the city include saw and shingle mills, sash and door factories, a wooden pipe factory, a clam cannery, flouring mill, brickyards, stone quarries, fruit drying and canning, etc. At the Pan-American Exposition, in 1901, the Olympia Chamber of Commerce was awarded a gold medal for its fruit exhibit, consisting of apples and pears, raised near Olympia, and it was admitted that the display of pears was the best on exhibition. No other city in western Washington received a gold medal. A silver medal was awarded Olympia for its superior quality of cranberries. At Tumwater, adjoining Olympia, the falls of the Des Chutes River are utilized to supply the power for the electric light and street railway system and other industrial purposes.

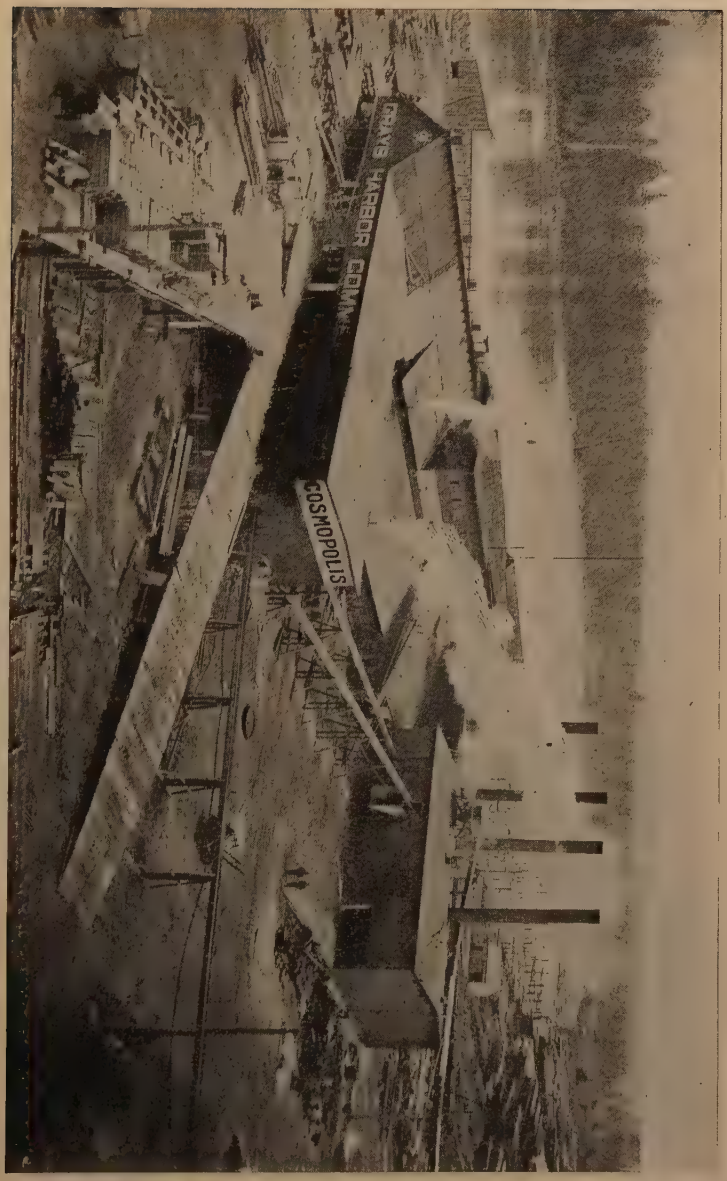
Olympia is not only the farthest inland city of the Sound, but it has the very best of rail and water facilities. It is the oldest city of western Washington, and has been the seat of government from territorial days to the present time. This city, made famous by the gods and Dewey's ship, is a thriving modern community, with well graded streets, a good sewerage system, ample waterworks, live newspapers, handsome brick and stone buildings, hotels and an imposing capitol. The population in 1900 was 4,002, but the estimate for 1903 is 7,000, the city having had a steady and healthy growth.

Ample harbor privileges are afforded here gratis to manufacturers, and there is an excellent opportunity for those desiring a location for the manufacture of anything in the timber or woodworking line, for canneries, clay works, glass works, etc.

The building of a canal from Puget Sound through to Gray's Harbor, which would follow almost entirely a river channel, has been strongly advocated. A canal of this character would cost a comparatively small sum of money, would give direct connection with the ocean, and will probably be completed at no distant date, as the obstacles in the way are so few.

The estimate of standing timber in this county for 1902 was two and a half billion feet.

Mason County lies upon the west side of Puget Sound, and covers the southwestern arms of that body of water. It has an area of 900 square miles and a population of 3,800. Three-fourths of the county's area is rugged and mountainous and is



LUMBER PLANT, COSMOPOLIS, ON THE CHEHALIS RIVER, WASHINGTON.

covered with a heavy growth of timber. Lumbering and logging are the chief industries. It furnishes a very large proportion of the shipments of the Olympia oysters, clams and all kinds of fish that are shipped in quantities.

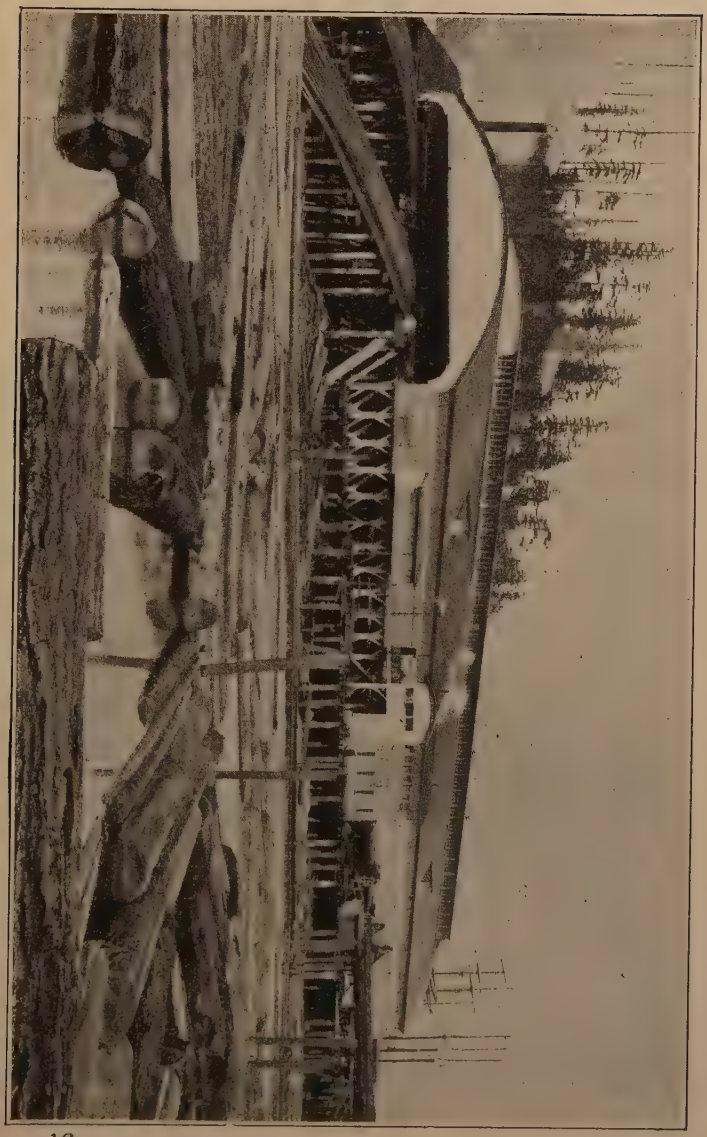
The river valleys are being rapidly cleared and turned into farms and fruit orchards. The entire headwaters of Hood's Canal are in this county, this canal affording another outlet to the straits.

Shelton, the county seat, lies twenty-two miles northwest of Olympia, and has a population of 1,353. It has four churches, graded public schools, electric light plant and two newspapers. Other towns are Clifton, Grove, Hoodsport and Union City.

Chehalis County is situated west of Thurston and Mason counties, and borders on the Pacific Ocean. The great estuary of Gray's Harbor covers quite a portion of the county. The area of the county is 2,600 square miles, and it has a population of 15,124. The principal river is the Chehalis, which enters the county from the southwest, runs eastward to Gray's Harbor, and is navigable to Montesano. It has a wide and rich valley, from which the timber has been cut and the land utilized for farming. The county still has vast forests, the manufacture of which into lumber is the chief industry at Aberdeen, Cosmopolis, Hoquiam and Ocosta. Shipbuilding is carried on to some extent at Hoquim, and the fishing industry is quite an important factor. The winters are very mild; there is ample rainfall and grass grows luxuriantly, making this county a good place for stockraising and dairying when the land is cleared. The Northern Pacific reaches the county from Tacoma and Portland, and a line is now building north along the coast, where there is dense timber and some good sawmill openings.

Montesano is the county seat, situated on the Chehalis River and the Northern Pacific Railway, and has a population of 1,597. Aberdeen has a population of 3,747, Hoquiam 2,824; Cosmopolis is owned entirely by the Grays Harbor Commercial Company, which has the largest sawmill plant on Gray's Harbor, with a capacity of 200,000 feet per day; also three shingle mills, a box and trunk factory and a planing and turning mill. Population, 1,000. In the northwest part of the county is the Quiniault Reservation. The hunting of elk and deer is especially good along the lower foothills in this locality.

Kitsap County belongs to the western tier of counties and comprises the peninsular between Hood's Canal and Admiralty



LUMBER MILL, PORT BLAKELEY.

Inlet, or the main inlet of Puget Sound. It lies directly west of Seattle and King County, has an area of 400 square miles, and a population of 6,796. The county is penetrated in all directions by different arms of the Sound, creating several land-locked harbors. On Port Orchard Bay, at Bremerton, is located the United States Naval Station and drydock, where the largest battleships in the navy have been successfully docked. Steamboats make connection with Seattle several times daily.

This county has some very large saw mills, situated at Port Blakely and Port Gamble, the former until recently having been the largest in the United States. This county has one of the chief lumbering manufacturing districts of the state. The soil here is good for vegetables and fruits, as well as other crops, and yields bountiful returns. The oyster business is assuming considerable proportions. Sidney, the county seat, seven miles west of Seattle, has a population of 794.

Jefferson County lies west of Puget Sound at the head of the Strait of Juan de Fuca, and extends west of the Pacific Ocean. It has an area of 2,000 square miles and a population of 7,512. It is extremely mountainous, covering the larger part of the Olympic Mountains, and has immense forests, especially on the west side, where the rainfall is the greatest in the state and where they are in their virgin state. Lumbering is at present the leading industry, but some mining and agricultural interests are being developed. There are three dairies and cheese factories in the county, with an output of 124,840 pounds of butter and 53,507 pounds of cheese. Port Townsend, the county seat, is a government port of entry, and is the site of the United States Marine Hospital. Forts Point Wilson, Alger, Marrow Stone Point and Casey are equipped with modern guns of the retiring pattern. The city has various manufacturing establishments, saw mills, etc. This is the last point of call in the United States when leaving Puget Sound points for foreign countries. Other important towns are Port Discovery, Port Ludlow and Pleasant Harbor. The Port Townsend Southern Railway extends south to Hood's Canal.

Clallam County lies south of the Strait of Juan de Fuca, and extends from Puget Sound to the ocean. With Jefferson County it covers the Olympic Mountains, and has an area of 2,000 square miles and a population of 5,603. It has extensive forests and the soil in the river valleys and along the coast and the straits is very rich. Like all other coast counties the prin-

cipal industry is lumbering, but fishing is extensively carried on, as halibut are caught in large quantities off Cape Flattery. Good hunting and fishing can be obtained in this county, the Olympics having been but slightly explored. There are two lakes in the mountains, about sixteen miles from Port Angeles, which afford remarkable trouting. In one of them, Lake Crescent, seven distinct varieties of trout are found. Good coal has been discovered in this county as well as several mineral ledges.

Port Angeles is the county seat, and is very romantically situated on the Strait of Juan de Fuca, at the base of the mountains. Population, 2,321. It has a good harbor and daily communication with the Sound cities by water, and a railroad has been projected from this point across to the ocean and down the coast to join with the line being built northward from Grays Harbor. Other towns are Dungeness, Port Williams, Clallam, Crescent and Quillayute.

Lewis County extends from the summit of the Cascades on the east to Pacific County on the west, and lies mainly south of Thurston and Pierce counties, covering the southern part of Mount Rainier National Park, with an area of over 2,000 square miles. Population, 15,157. This county had a great deal of timber, and lumbering is still carried on extensively. The Chehalis and Cowlitz rivers drain the county, the former emptying into Gray's Harbor, the latter rising on the sides of Mount Rainier and emptying into the Columbia River on the south. The valleys of these rivers and their tributaries afford large areas of agricultural lands, on which considerable wheat is grown, and there are many large orchards. This is perhaps the largest agricultural county west of the Cascade Mountains. About all of the government land has been taken, but some can still be acquired and land can be bought cheaply. There are several flour mills and a number of saw mills, which, together with coal mining, farming, and dairying, constitute the industries. There are thirteen dairy and cheese factories in the county. One hundred and eight schools supply adequate educational facilities. The Northern Pacific Railway main line extends north and south, and a branch line runs westward to South Bend, on Willapa Harbor.

Chehalis, the county seat, is situated on the Northern Pacific Railway and the Chehalis River, and has a population of 1,775. It is about midway between Portland, Ore., and Puget Sound,

HAULING LOGS IN WINTER.

and has churches, one of the finest hotels of the state, large saw and shingle mills, a flour mill, and the reform school. It is a large shipping point. Centralia, one of the principal towns, has a population of 1,600.

Pacific County is the extreme southwest county of the state, lies west of Lewis County, and is bounded on the west by the Pacific Ocean and on the south by the Columbia River. It has an area of 900 square miles and a population of 5,983. Along the western line running north from the Columbia River is a narrow strip of land enclosing Willapa Harbor. On this strip a branch of the Oregon Railway & Navigation Company has been built and Long Beach and other places have become quite prominent resorts for Portland people. Connection is made at Ilwaco by Oregon Railway & Navigation Company boats.

Several streams enter Willapa Harbor, along which there are dense forests, and the land is the very best for agricultural purposes. Hop culture and dairying are the chief industries outside of lumbering. Oyster culture gives employment to several hundred men. Portland and many southern points are served from these beds.

South Bend is the county seat, has a population of 711, a number of banks, churches, saw mills, sash and door factory, and other industries. Other towns are Ilwaco, Oysterville, Bay Center, Fort Canby, and Willapa. Fort Canby is located on Cape Disappointment and is a United States fort protecting the mouth of the Columbia River.

Wahkiakum County lies along the Columbia River in the southwestern part of the state between Cowlitz and Pacific counties. It has an area of 274 square miles and a population of 2,819. Lumbering is important, but the chief source of revenue is fishing. There are eight large salmon canneries on the river, which employ a large number of men and furnish a means of livelihood for several hundred fishermen. There are twenty-two public schools in the county. Cathlamet, the county seat, situated on the Columbia River, has a population of 500 people, and has churches, canneries, a newspaper, etc.

Cowlitz County lies on the Columbia River in the southwestern part of the state. The county is mountainous but has several river valleys, along the Cowlitz, Lewis and Kalama rivers. There is splendid bottom land along these rivers, where all kinds of crops are raised, and there are many fine orchards throughout the county. Coal measures to a considerable ex-

tent underlie this county. The Northern Pacific Railway runs north and south and reaches the valley of the Columbia through the Cowlitz Valley. Its cars are conveyed across the Columbia River by ferry at Kalama, the county seat, which has a population of 945, several saw mills, a bank, churches, schools and a newspaper.

Skamania County lies in the Cascade Mountains, but is bounded on the south by the Columbia River. It has an area of 1,600 square miles and a population of 1,688. The high peaks and deep gorges make this county remarkable for scenic beauty. The great portion of the agricultural land borders on the Columbia River, and this land yields large returns. The principal industries are the manufacture of lumber, and fishing. Stevenson, the county seat, situated on the Columbia River, has a population of 338. The Cascades of the Columbia River gorge are at this point. Other towns are Cape Horn, Mount Pleasant, and Nelson. Mount St. Helens, 10,000 feet high, is situated in the northwest part of this county. The usual route to this mountain is up the Lewis River. A new copper district known as the Bohemia district lies north in this county and has the prospect of being a great producer. Three railroads are now being built to it.

NORTHERN PACIFIC RAILWAY TRANSFER STEAMER, ACROSS COLUMBIA RIVER AT KALAMA.

Clarke County lies west of Skamania County and along the Columbia River. It has an area of 600 square miles and a population of 13,419. A large part of this county is quite level and the land is of good quality. All the different crops are successfully raised. Fruit growing is the chief industry, the county being noted for the great quantity of prunes produced and shipped each year. The dairy interest is considerable, the amount of butter made being over 100,000 pounds, and of cheese over 200,000 pounds annually.

Vancouver is the county seat, situated on the Columbia River, and has a population of 4,006. The State School for Defective Youth is located here, also a United States army post. This is the original Hudson's Bay Co. post, and the fort played a very

GENERAL GRANT'S OLD HEADQUARTERS AT VANCOUVER, WASH., AS IT LOOKS TO-DAY.

important part in early history, General Grant, Sheridan, and others who became famous in later years having been stationed here. This city is but a few miles from Portland, with which it is connected by ferry and an electric railway line, the cars running every thirty minutes.

OREGON.

Oregon, one of the group of Pacific Northwest states, is bounded on the north by the state of Washington, on the south by California and Nevada, on the west by the Pacific Ocean, and on the east by Idaho. Its average length from east to west is 360 miles, and its mean width north and south 260 miles. Its estimated area is 96,030 square miles, equaling the states of Ohio and Iowa combined, 1,470 square miles being water. Its population in 1900 was 413,536, which is to-day estimated at more than 500,000.

The first printed mention of the word "Oregon" is in Jonathan Caran's book, entitled "Travels Through the Interior Parts of North America," printed in London in 1778. These travels had been made in 1766 and 1767. Caran applied the name to the great river flowing westward from the "Stony" or "Shining" Mountains, which he called the "River Oregon." In 1812 Bryant immortalized it in his Thanatopsis in the following lines:

"Where rolls the Oregon and hears no sound,
Save his own dashings—yet—the dead are there."

Early History.—The Oregon country has been a much governed and much dissected territory. Spain, at one time, claimed it, with all the Pacific Coast country from California to Alaska; Russia asserted ownership as far south as Tillamook; France set up a claim upon explorations made from Canada, and Great Britain asserted its rights to possession on the discoveries made by Captains Cook and Vancouver, and still later the occupancy by the Hudson's Bay Co. The claims of the United States were based upon the discovery of Captain Robert Gray, who entered the Columbia River and named it after his vessel. Then came the Louisiana purchase in 1803; Spain's rights were ceded to the United States by treaty in 1819; the claims of France were ignored; Russia ceded her rights to Great Britain and the United States, leaving these countries to settle their differences by themselves; in 1804-5 Lewis and Clark explored the Columbia River, and in 1810 Nathaniel Winship, representing a Boston company, built the first house on the banks of the Columbia at Oak Point. John Jacob Astor, of New York, established a fur trading post at Astoria in 1811, which was sold to the Northwestern Fur Co. in 1813, and merged into the Hudson's Bay Co., which built a fort and part of what is now Vancouver, Wash. The Oregon Country from this time until the final settlement of authority, was an open country. In 1832 Captain Wyeth, of Massachusetts, erected a fishery at the mouth of the Willamette River, and in 1834 two Methodist missionaries founded a mission at Salem; then followed the Dr. Marcus Whitman party, spoken of before, who settled on the Walla Walla River. Whitman feared that the Oregon Country might be lost to the United States, and with a single companion rode on horseback to Fort Hall, now Pocatello, Idaho, then to the great Salt Lake, now in Utah, thence to Santa Fe, now in New Mexico, then

to St. Louis, and thence by stage to Washington, the trip occupying a period of five months. His enthusiasm inaugurated a series of movements which finally settled the Oregon controversy. In 1841-2 a tide of emigration set in and in 1843 Whitman piloted fully 1,000 people to the territory from Missouri, and in that year a provisional government was set up. In 1846 the international boundary question was settled, and in 1848 Congress created the whole territory west of the Rocky Mountains lying north of the 42° of latitude into the territory of Oregon. The governorship was offered to Abra-

OLD PHIL SHERIDAN BLOCK HOUSE, 1856. CASCADES, COLUMBIA RIVER.

ham Lincoln, but was declined by him and accepted by Gen. Joseph Lane, of Kansas. In 1853 Washington Territory was carved out of Oregon, and in 1859 Oregon became a state.

The settlement of Oregon, immediately following the Civil War, was so largely from the middle western south that it is often said that Price's army never disbanded but simply went into camp in Oregon.

Topography.—Oregon, topographically, is divided into two very dissimilar sections, lying respectively east and west of the Cascade range of mountains, which run almost due north and south, parallel to the coast line, at a distance of about 100

miles inland. This range traverses the state from Washington to California and has an elevation of from 4,000 to 10,000 feet, with higher peaks, viz.: Mount Hood, the farthest north, near the Columbia River, 11,225 feet; Mount Pitt, to the extreme south, 9,760 feet; Mount Thielsen, 9,230 feet; Mount Jefferson, 10,200 feet; and the Three Sisters, 9,420 feet. All these peaks rise to the region of perpetual snow and are extinct volcanoes, Mount Hood probably being the last to become extinct. From the main range cross-ranges project westward, such as the Calapooia, the Rogue River and the Siskiyou mountains, these ranges being in the southern part of the western section of the state. The Siskiyous follow the boundary between Washington and California. The Coast Range of mountains parallels the coast in a zig-zag manner, is somewhat disconnected, and has an elevation of about 3,500 feet. At some points spurs of the Coast Range reach the ocean, but in general there is an intervening belt of land from twenty-five to fifty miles in width.

Between the Cascade Mountains and the Coast Range are three important river valleys—the Willamette, the Umpqua, and the Rogue—so named from the rivers flowing through them. The Willamette Valley extends north and south between these mountains for a distance of 130 miles, having a width of fifty miles and a general area of about 7,800 square miles. It contains nearly one-half the population and wealth of the state. The valley, as well as its slopes, comprise a series of loam lands, and the higher lands are also well soiled. The Calapooia Mountains bound this valley on the south, and show evidences of having been the southern boundary of a valley extending as far north as Puget Sound, in Washington. The Willamette River is the chief tributary of the Columbia west of the Cascades. It is about 250 miles long, flows northward, is navigable for large ships to Portland, and during two-thirds of the year small steamboats ascend to Eugene, in Lane County, about 150 miles from the mouth. The falls at Oregon City, which afford excellent water power, have locks for the use of these boats.

The Umpqua River rises in the Cascade Mountains in two branches, and flows westward to the sea, between the Calapooia Mountains on the north and the Rogue and Umpqua mountains on the south. This valley is about 200 miles long, is rich in soil, and produces large crops. The Rogue River also has its source in the Cascade Mountains, and flows into

CLIMBING MOUNT HOOD.

the ocean after a westerly course of about 120 miles, mostly between the Rogue and the Siskiyou mountains. This valley is small but rich agriculturally.

The Columbia River forms the northern boundary of the state of Oregon for a distance of 300 miles, cutting the lofty Cascade Mountains of Washington and Oregon into two parts. The great gorge of the Columbia has a world-wide reputation for scenic grandeur. At the Cascades, about 150 miles above its mouth, the river descends 300 feet in a canyon 4,000 feet deep and nearly six miles long. In cutting its pathway to the sea the water has formed many curious and shapely rocks, which adorn the valley at every turn and interest the sight-seer. Multnomah Falls, a beautiful cascade, near Portland, descends 850 feet and may be seen from boat or train. The river is navigable to Priest Rapids, a point some distance above the Snake River, in Washington, with the exception of Celilo Falls and the Cascades; around the latter a canal 3,000 feet long, with locks, has been built by the government at an expense of $4,000,000, and a survey of The Dalles has been made, looking to the improvement of the falls. The Snake River is navigable for 165 miles, or to the mouth of the Grande Ronde River.

East of the Cascade Mountains the Columbia River receives the Des Chutes, which rises in the Cascades and flows northward along the eastern slope, receiving the different short streams from the mountains, reaching that river a short distance above The Dalles. Next in importance, to the east, is the John Day River, which has its source in the southern slopes of the Blue Mountains, and empties into the Columbia after a westerly and northerly course of 250 miles. On the west side of the state the Snake River forms a boundary for more than half of the whole line betwen Idaho and Oregon. It is joined by the Grande Ronde, Powder, Burnt, Malheur and Owyhee rivers.

Eastern Oregon embraces all that portion of the state lying east of the Cascades, and is generally a high table land. In the northeastern part it is traversed by the Blue Mountains, trending northeast and southwest, with a spur running to the south. These mountains have an altitude of about 7,000 feet, and divide the northern half of this eastern section of the state into deep valleys. Among the important offshoots of this range are the Eagle Creek and Powder River mountains, enclos-

MULTNOMAH FALLS, OREGON.

ing the valleys of the Burnt, Powder and Grande Ronde rivers.

In central Oregon, east of the Cascades, between the headwaters of the Des Chutes and Crooked rivers, and the headwaters of Silver Creek, to the north and east, in Crook, Lake and Harney counties, is an extensive and comparatively barren plain known as the Sage Plains. This region is very arid, but irrigation is now about to be established, the soil in most instances being volcanic and fertile. The major part of southeastern Oregon belongs to the Great Basin, which comprises part of Utah and Nevada. This basin is estimated to cover 200,000 square miles, and is for the most part an arid waste. The soil is fertile, but the rivers are short, losing themselves in sinks. Wide lava beds are interspersed with level tracts covered with sage brush, stunted pine and juniper. The Steins Mountains rise in the midst of this desert and are a very striking feature of the southeastern part of the state.

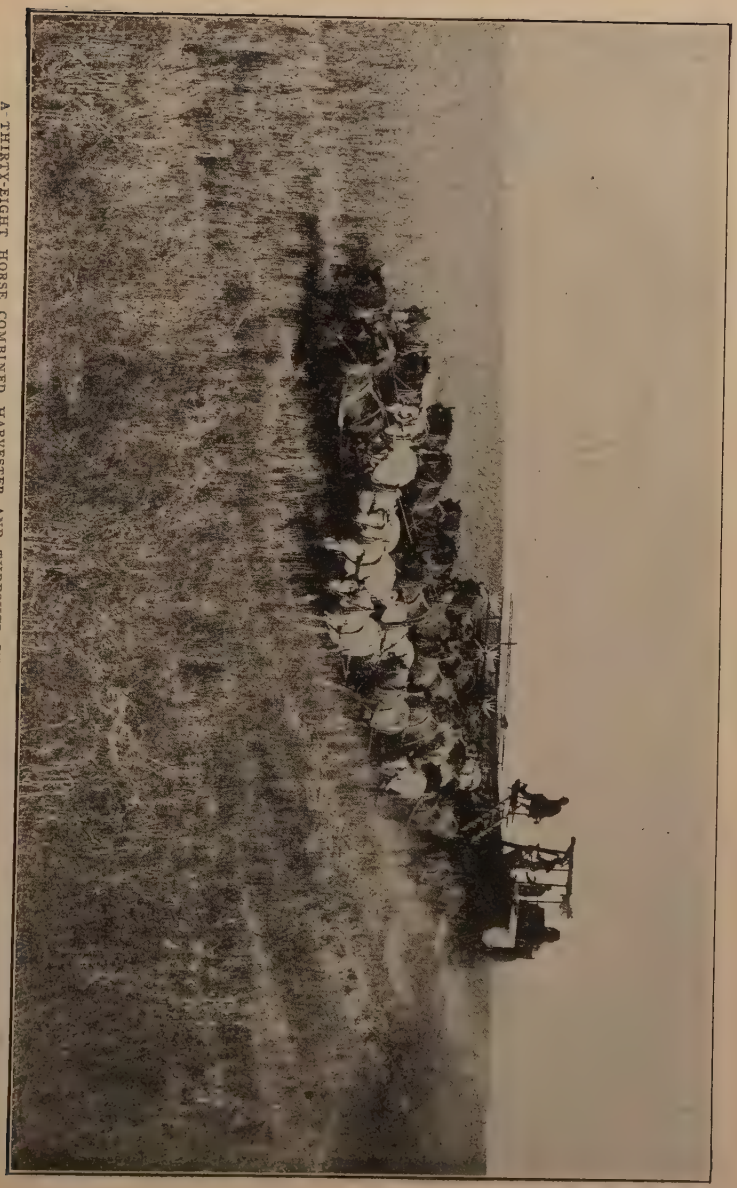
There are some lakes (really sinks) in the basin, whose waters are strongly alkali in spring, and in summer merely mud plains. Oregon has a large number of prominent lakes. In Klamath County are located a number of these, the largest of which take their name from the county, the upper being thirty miles long and eight miles wide; the lower extends into California. These are the headwaters of the Klamath River, which, flowing westward to the ocean near the boundary, between California and Oregon, divides the Sierra Nevada from the Cascade mountains. Crater Lake, in the same county, occupies the old crater of Mount Mazuma, is eight miles long and six miles wide, and 1,996 feet deep, its vertical walls rising from 800 to 2,000 feet. Its surface lies at an elevation of 6,300 feet, and the waters are clear and cold, and abound in trout. This is one of the natural features of the state and is reached from the line of the Southern Pacific Railway. Wallowa Lake, in the northeastern part of the state, is large, lies at an elevation of 4,000 feet, and abounds in trout. Lake County is the center of the lake region, the largest sheet of water being Goose Lake, lying partly in California. This lake is fifty miles long, and from eight to fifteen miles wide. Other lakes are Christmas, or Warner, Albert, Summer, and Silver, all being clear and containing plenty of fish. In Harney County are two considerable lakes, Harney and Malheur (practically one), over thirty miles long, and from three to fifteen miles wide.

CELILO FALLS, COLUMBIA RIVER. NOTICE JUMPING SALMON.
Copyright, by Benj. A. Gifford, The Dalles, Ore.

CLIMATE.—The climate is generally very mild, due to the same causes which affect the other Pacific states. The winds for three-fourths of the year blow from the southwest, or off the warm body of the Pacific Ocean, and the Kuroshiwo, or Japanese warm current, which strikes the coast and influences the temperature, far into the interior. This Asiatic stream of tropical water is of considerable magnitude, being 400 miles in width, and has a velocity of about four miles per hour. It has the same effects as the gulf stream of the Atlantic. The north line of Oregon is of the same latitude as central Maine, and yet west of the Cascade Mountains flowers bloom out of doors all winter. The Cascade Range makes a wide difference in the temperature of the east and west sections. The range of the thermometer at Portland, near the coast, is from 22° to 96°, while at Baker City, in the extreme eastern part of the state, the range is from —14° to 101°; the mean temperature for the state, however, is 50°. There are few, if any, sections of the state in which cattle or sheep require shelter and extra feeding during the winter months. The bunch grass of the plains cures itself into hay on the ground.

The seasons in the west section are divided into the wet and the dry, rather than the winter and the summer seasons. The wet season extends from November 15 to March 15, during the greater part of which time rain falls copiously. On the immediate coast the precipitation varies from 105 inches, at Gold Beach, in the extreme southwestern part of the state, to 81.96 at Fort Stevens, at the mouth of the Columbia; from fifty-five to sixty-six inches at different points in the Willamette Valley; in eastern Oregon from 75.73 inches, at the Cascade locks, in the gorge of the Columbia, to 9.81 inches at Umatilla; and from fourteen to seventeen inches in the highlands of Lake County, adjoining the California line.

RESOURCES.—In the extent of its agricultural, mineral and forest resources, Oregon ranks very high, yet its possibilities for development have been only partially realized. The state is largely devoted to agriculture, the western part of the state, especially the Willamette, Umpqua and Rogue River valleys, having the highest cultivated farming lands. On the other hand, eastern Oregon, which has a very fertile volcanic soil, extensive areas of which, in the northeastern part of the state, are devoted to the raising of the cereals, mostly wheat, without irrigation, and where the land is too arid for the raising of crops without irrigation, is devoted to stock grazing. In 1900,



A THIRTY-EIGHT HORSE COMBINED HARVESTER AND THRESHER IN A 10,000 ACRE WHEAT FIELD, EASTERN OREGON.

10,071,328 acres, or one-sixth of the total area of the state, were in farms, and one-third of this amount was improved. The principal farm crops were: Wheat, 14,830,000 bushels; hay and forage, 1,117,886 tons; oats, 6,725,828 bushels; and potatoes, 3,761,367 bushels; value, $9,000,000; and nearly 2,000 cars of evaporated and green fruits; value, $1,500,000. Wheat brought an average of all grades, about forty-four cents per bushel; hay and forage about $5.50 per ton; oats about thirty-one cents per bushel; and potatoes about thirty-two cents per bushel. Wheat in 1902 brought fifty-two cents per bushel. The wheat crop of Oregon for 1902 was 15,512,460 bushels, and in 1887 it was 16,100,000 bushels. The total irrigated area in the state in 1900 was 388,310 acres, 290,256 acres being under crop, and 98,054 under pasture. The wool product amounted to over 20,000,000 pounds, with a value of $2,800,000. The value of stock was over $10,000,000; of dairy products, $1,500,000, and of the hop crop, $3,500,000.

The mineral resources of the state comprise all the different metals, the value of the output for 1900 being, gold, $1,649,700; silver (coinage value), $149,204; coal, $220,000; borax, $100,000; and stone, $21,663. The value of gold output was increased in 1902 to $6,740,000. There are several mining districts in the Cascades, in southern and western Oregon, but the richest mineral belts seem to be the three mineral zones of eastern Oregon, which are perhaps as large as any on the American continent. One of these lies partly within the state of Idaho and fringes the eastern boundary of Union, Baker and Malheur counties, and is from ten to twenty miles in width. Another zone begins at the Eagle Mountains, northeast of Baker City, is about fifteen miles in width, and extends in a southwesterly direction a distance of about sixty-five miles. The third zone has the same general direction, begins in the Elkhorn Mountains, is about twenty miles wide, and extends a distance of 100 miles. The principal districts in eastern Oregon are in these zones, tributary to Baker City and Sumpter.

The great natural resource of Oregon is its timber, which is located largely on the west side of the Cascade Mountains, where the rainfall is the greatest and the climate mild. The manufacture of this timber into lumber leads all other industries in the value of its output, which in 1900 amounted to $10,352,167. Large tracts of timber stand in the Rogue River and Umpqua valleys, and along the Coast Range and the Cascades

A TWELVE FOOT OREGON FIR.

to the Columbia River, as well as a fine body on the east side of the Cascades, at the head of the Des Chutes River, and several other points on the eastern slope of the Cascades, and in the Blue Mountains in the northeastern part. The estimated standing timber is 225,000,000,000 feet, of which 150,000,000,000 consists of fir. The damage by fire, the indiscriminate waste, and the need of reservoir sites, has induced the government to set aside forest reserves, and 4,500,000 acres along the higher Cascades now constitute the reserves for this state.

The rafting of logs and piling and towing on the ocean to San Francisco has been of late years successfully carried on. These rafts are constructed into cigar shaped form, the logs being firmly chained into a solid mass. The rafts are then towed to sea by tugs. The largest of these rafts ever made reached San Francisco in September, 1902. Its length was one-eighth of a mile, it drew 24 feet of water and contained 6,000,000 feet of piling, scaling nearly 8,000,000 feet of lumber, board measure.

In 1900 the manufacturing establishments of Oregon numbered 3,088, having more than doubled since 1890, due to the abundant water powers, the increasing railway systems, and the better condition of the roads. These establishments represented a capital investment of $33,422,393, and distributed during the year the sum of $18,333,433 in wages to 17,236 employes, of which 1,821 were women. The value of the raw material used was over twenty-six million dollars and the finished product over forty-six million dollars. Ship and boat building has had quite an impetus, seventeen yards now being in operation. Flour and grist mill industries rank second in the state, the product values amounting to $6,364,023. The canning and preserving of fish, chiefly salmon caught in the Columbia River, ranks third, with products valued at $1,788,809. This industry dates from 1866, and is chiefly centered at Astoria, embracing some of the canneries in Washington. The salmon fisheries of the Columbia are the most extensive in the world. The danger of exhausting the salmon has been averted by establishing hatcheries on the river's tributaries.

In 1902 the product of the nine leading industries of the state equaled $47,000,000, or more than $100 for every man, woman and child in the state.

Transportation.—Oregon has a complete system of railway communication, extending east and west across the northern part of the state, in the lines of the Oregon Railway &

A COLUMBIA RIVER RAFT, ONE-EIGHTH OF A MILE IN LENGTH.

Navigation Company, which follows the Columbia River, through the Cascade Mountains, and connects at Huntington with the Oregon Short Line Railway, for all Idaho and eastern points, and at Umatilla and Pendleton for Spokane, Washington, and the Coeur d'Alene mines in northern Idaho, and ramifies the great wheat plains of the Columbia Basin. The connection with the Great Northern and Northern Pacific at Spokane and at Butte, Montana, gives a northwestern outlet. The Columbia River at present is navigable to The Dalles, and the Willamette to Eugene, 146 miles. Some of the rivers, rising in the coast range and emptying into the sea, are navigable for a considerable distance. The Southern Pacific line not only connects Portland and San Francisco with one main line, but traverses the Willamette Valley with three other lines. The Corvallis & Eastern Railway extends from Yaquina Bay nearly to the summit of the Cascade Mountains, and this road is expected to make a short line to the east. The Astoria & Columbia River Valley Railway connects Portland with Astoria and the ocean. The Columbia Southern Railway leaves the Oregon Railway & Navigation Company at Biggs, east of the Cascade Mountains, and is extending its road gradually up the Des Chutes River, having now reached Shanico. The ocean transportation, as far up as Portland, for the largest vessels and the smaller coast craft, and the various seaports of the state, especially Yaquina Bay and Coos Bay, afford all requirements. The Willamette River is navigable for 150 miles.

LANDS.—In 1900 there were about 35,000,000 acres of public lands open to settlement. Of these, 5,000,000 acres were school lands, which are offered at from $1.25 per acre upward.

COUNTIES.

BAKER COUNTY adjoins the Idaho line and lies between Union County on the north and Malheur County on the south. The Powder River bounds it on the north, and most of the valley of this river and of Burnt Creek, both of which empty into the Snake River, Eagle and Pine valleys, are embraced in this county. Farming is confined to the valleys, and irrigation in most cases is necessary, but there is ample water for all the valley land. The cereals, tame grasses and alfalfa do well. The grasses of the upland furnish range for 40,000 head of cattle and 15,000 sheep, and there is some dairying. Timber covers, in unbroken stretches, hundreds of thousands of

THE RED BOY MINE AND REDUCTION PLANT, SUMPTER, OREGON.

acres on the mountains, and many openings are here offered in the sawmill line. Mining is the largest and most prominent industry. The surrounding mines have given quite an impetus to Sumpter, a thriving mining town in the Blue Mountains, and the terminus of the Sumpter Valley Railway. A smelter is now being constructed and an extension of the railway is under way, while an electric line is being built from Sumpter into the higher altitudes. The mines here are advancing rapidly, new strikes having been made, showing the strength and continuity of the veins. Capital from all parts of the United States is being invested. The city had a population of 1,700 in 1900 and to-day probably has 4,000 people. It is building rapidly, has 150 business houses, and prices are advancing.

At Huntington the passengers who have been traveling on the Oregon Short Line Railway through Idaho, having crossed the Snake River, take the Oregon Railway & Navigation Company, which road conveys them either to Portland or Spokane, as they may elect. This being the end of a division, it is a railroad town with a population of 821.

Baker City, on the Oregon Railway & Navigation Company, is the county seat and the center for the agricultural and mining regions. It had, in 1900, a population of 6,663 and today probably has 7,500. It is the largest city east of the Cascade Mountains, has several banks, an opera house, the most pretentious hotel east of Portland, large business houses, a smelter, sawmill, etc. A large irrigation canal on the Powder River nearby will bring into use from 60,000 to 100,000 acres of land. Improved lands in this county range from $20 to $40 per acre. They can be had on part cash payment.

Union County, when being established, was evidently cut to fit the configuration of the country, and to cover the entire Grande Ronde Valley. It covers an area of about 3,000 square miles, three-fourths of which have been surveyed. The unsurveyed portions are mostly mountainous, but valuable for timber and pasturage. The largest body of agricultural land in the county is that of the celebrated Grande Ronde Valley, which covers 300,000 acres of rich, level land. This is in the heart of the Blue Mountains, which rise to a height of several thousand feet. The Grande Ronde River flows through the county in a northeasterly direction, and many other streams reach it from the hills on its course. Irrigation is not required at all for the cereals in this valley and but little for fruit. The

chief products are fruits, cereals, sugar beets, minerals, stock and lumber. There are about 15,000 head of cattle and 30,000 sheep in the county. Fruit does remarkably well, as high as thirty boxes of apples having been picked from a mature tree. Prunes are also a good crop. A sugar beet factory has been established at La Grande, which is annually using the beet crop from 3,500 acres, and can use the product from double that acreage. The land is well adapted to the raising of wheat, the crop for 1900 being 2,000,000 bushels, and there are good opportunities here for those desiring to raise this or any other crop. Timber is abundant and there are many saw-

IN THE GRANDE RONDE VALLEY, OREGON.

mill sites available. The climate is very healthy, the winters are short and sharp, but the air is dry. Improved valley farms, part cash payments, from $30 to $40 per acre.

Union, the county seat, is located on the Oregon Railway & Navigation Company line, and has a population of 937. Near this town is Hot Lake, which has acquired an extensive reputation. This is a lake of hot, steaming water, about 300 yards in diameter. A hotel with bath houses affords good accommodation for visitors. La Grande, the principal city of the county, is located on the same railroad and has a population of 2,191. This is a growing town, the repair shops of the rail-

way company being located here. It is also the end of the mountain division. It has sawmills, a sugar beet factory, banks, stores, and two newspapers.

WALLOWA COUNTY lies in the northeast corner of the state, is bounded on the north by Washington, on the east by Idaho, and on the south and west by Union County. This county partakes of the same nature as the southeastern counties of Washington, lying along the Blue Mountains and covering the valleys of several streams which flow into the Snake River. A portion of its eastern boundary is the Grande Ronde River, and the deep canyon of the Snake River borders it on the east. It has a population of about 6,000, and produced in 1900 about 400,000 bushels of wheat, besides other cereals, and 100,000 pounds of butter and cheese, with considerable fruit. There were 95,000 head of sheep and goats, 14,000 head of cattle, and 9,000 head of horses in the county in 1900. Beans have become quite an extensive crop. No irrigation is required for the cereals, but it is necessary for fruit.

Enterprise, the county seat, is an inland town on the Wallowa River, reached from Union, on the Oregon Railway & Navigation Company, by stage. Wallowa and Joseph are enterprising towns. Improved lands can be bought in the county for $8 to $10 per acre.

UMATILLA COUNTY lies west of Union County, along the Washington line, and the Columbia River. Its location is directly south of Walla Walla County and is a part of that valley, the Walla Walla River rising in this county. The Umatilla River rises in the Blue Mountains and flows westward through the county to the Columbia River. This county contains about 2,000,000 acres of agricultural lands, about one-fourth of which are under cultivation. It has a population of 18,000 and is considered the great wheat county of eastern Oregon, producing annually about 4,000,000 bushels. The other cereals are largely grown and their straw is cut for hay, but alfalfa is the main dependent and is a very profitable crop. There are grazing on the plains of this county about 130,000 sheep, 15,000 head of cattle, and 13,000 head of horses. Many sheep are run upon the grain stubble during the winter, and in the summer pastured higher up in the mountains, where the feed stays green. The soil of this county is of a volcanic character and is exceedingly fertile, though semi-arid. Dairying is carried on in the southern part, 300,000 pounds of butter and 100,000 pounds of cheese having been produced in 1900. The wool

PICTURED ROCKS OF THE COLUMBIA.
Lee Moorhouse, Am. Photo. Pendleton, Ore.

clip handled at Pendleton during that year amounted to 6,000,000 pounds. One hundred thousand bushels of apples were raised in the county, and 20,000,000 feet of lumber manufactured.

The summer season is very dry, the necessary moisture for crop production coming in rain and snow during the wet season. Irrigation is required for alfalfa and for fruits. The summer weather is hot, and the winters short and moderate. A very large part of the wheat crop is ground by the local mills, the product being sold throughout the surrounding country and shipped abroad. Much of the wool is cleaned and manufactured at the mills in Pendleton, into blankets, which have a wide reputation, especially those of the attractive Indian patterns.

The soil in the volcanic wheat belt is so very light that when the heavy loads of wheat are being hauled to market the roads become deeply cut and several inches of dust lie upon them. In casting about for a remedy, it was decided to ask the general public to assist in hauling and depositing straw upon the roads, and some one day be decided upon on which general co-operation could be had. This day was inaugurated at Walla Walla, and is now quite generally participated in. It is known as "straw day," and is usually one of the early days of September, the crop having been harvested by that time. In 1902, on this day, a grand barbecue was held at Walla Walla, and 100 wagons, loaded with straw, were headed by the mayor of the city and a brass band while the straw was being hauled and placed upon the roads.

A novelty in the extensive wheat regions is the connection of the farms by telephone by utilizing the barb wire fencing. Some of the telephone companies have many hundreds of miles of such line, with poles only where a "lift" is required at road crossings.

Lands in this county range from $10 to $40 per acre. Stock range lands from $1 to $5 per acre. The Umatilla Indian Reservation occupies several townships of land in the central and southern part of the county. These Indians have largely intermarried with the whites.

Pendleton, the county seat, is situated on the Oregon Railway & Navigation Company main line; from here a branch connection is made with Spokane and all northern points. Pendleton is a thriving city of 5,000 inhabitants, has good buildings, several banks, manufacturing establishments, and

carries on a prosperous trade. Umatilla is also a junction of another branch of the Oregon Railway & Navigation Company, extending up the Columbia River, where connection from Portland is made with Spokane. Other towns are Athena, Weston and Newton.

Morrow County lies west of Umatilla County and along the Columbia River. This is another of the semi-arid counties which raises the cereals without irrigation, about 750,000 bushels of wheat and 100,000 bushels of barley being produced annually. The land is covered with bunch grass and is well adapted to stockraising, which is an extensive industry. There are some large flocks of sheep owned here, amounting in all to

A BUNCH OF OREGON SHORTHORNS RAISED AT HEPPNER.

130,000 head, and some blooded stock of the best strains. The wool clip in this county reaches about 2,500,000 pounds per year. The county has an area of 900 square miles and a population of 4,200. Lands which have been sown to wheat can be obtained for from $6 to $15 per acre. The Willow River rises in the Blue Mountains and flows northwest through the county. Good coal in extensive beds has been found in the Willow Creek district. The Oregon Railway & Navigation Company main line traverses the northern part of the county, and a branch extends to Heppner, the county seat, which has a population of 1,400, and is the headquarters for a large wool and stock country to the south. This is a very prosperous town. Ione

is a great business town and has a population of 600. There is some government land to be obtained under the government laws in this county, and some very good openings are available for farmers desiring to buy.

Gilliam County lies west of Morrow and along the Columbia River, is bounded on the west by the John Day River, and is traversed by Thirty Mile and Rock creeks, which flow into the John Day. The surface of this county is rolling, but it has little timber. It is semi-arid, the soil being fertile but requiring irrigation for all crops except the cereals. Therefore the principal business is stockraising, there being about 70,000 head of sheep grazing, though considerable fruit is raised, this being a fine agricultural district. This is the sportsman's paradise, as there is an abundance of trout in the streams, and bear, deer and small game are to be found in the hills. The Oregon Railway & Navigation Company traverses the northern part of the county along the Columbia River, on which railway Arlington, the principal town, is located. Condon is the county seat, a small inland town in the southern part of the county. There is some government land here yet untaken. Lands can be had, fairly well improved, for $10 per acre.

Sherman County lies along the Columbia River and between the Des Chutes River on the east and the John Day River on the west. It is another of the semi-arid counties, has an extensive farming district, and considerable stock interests. The Oregon Railway & Navigation Company main line follows the Columbia River on the north, and the Columbia Southern Railway has built from Biggs south through the county. Moro, on the latter road, is the county seat. This is the outlet of the whole Des Chutes country to the south. Its general characteristics are about the same as the counties adjoining to the east. This is the second largest wheat county in the state, the crop for 1900 being 3,000,000 bushels. In 1902 it raised one-sixth of the total wheat crop of the state. Land is worth $10 per acre.

Wasco County lies along the Columbia River and extends from the summit of the Cascades on the west to the Des Chutes on the east in its northern part, a distance of sixty-six miles, and to John Day River, on the southern part. The area of this county is 3,315 square miles, or over 2,000,000 acres, of which 81,000 are under cultivation, and over 1,500,000 remain untaken. This is a large county and one of varied conditions. The Columbia River here flows through the great gorge it has

CASTLE ROCK, COLUMBIA RIVER.

Copyright, 1901, by Geo. M. Weister, Portland, Ore.

worn or forced through the Cascade Mountains. Mount Hood stands on the western boundary and from its summit a panorama of great beauty spreads out before the eye. The Cascade Mountains are heavily wooded on their eastern slope, and from their side streams run through the plateau to the Des Chutes River and northward to the Columbia. This county would be classed as a semi-arid county, but it is less so than the counties to the east. The uplands have a volcanic soil, and produce the cereals without irrigation, while the valleys have an alluvial soil susceptible of irrigation. About 750,000 bushels of wheat are raised annually. There are 125,000 sheep and goats, 5,000 head of cattle, and 5,000 head of horses grazing in the county. The fruit and berry industry is very important, the Hood River district having produced both fruit and berries in prodigious quantities and of excellent quality. Those most successfully grown are apples, pears, peaches, apricots, prunes, plums, cherries, grapes and strawberries, which are shipped to the east, many reaching New York, and some have even crossed the ocean. About 6,000 acres have been set out to orchards and 300 acres to grapes, besides large districts to vines, mostly strawberries. Of the 1901 crop, 40,000 crates, or four-fifths of the entire strawberry crop of the county, were shipped from Hood River. The estimate of the strawberry acreage in the Hood River and Salmon River valleys is 350 acres, which realized a net profit of $150 an acre to the owners. Hood River strawberries are becoming known everywhere. Two hundred car loads were shipped in 1902, less than one-tenth of the best lands of the valley being under cultivation. The apples here are of a remarkable size and flavor.

The climate is quite equable, the extreme being from —12° to 108°, the mean being about 52°, and the rainfall averaging about sixteen inches. Lumbering is a prominent business and affords some good openings. Fruit lands under a high state of cultivation are worth from $300 to $500 per acre. There are other and much cheaper lands, and there are some good homesteads left in more remote localities. A ten acre farm, suitable for fruit, but not under cultivation, can be bought for from $40 to $50 per acre. Wheat lands and stock lands, $10 per acre. The population of this county in 1900 was 13,199.

The Dalles, the county seat and most prominent city, is located on the Columbia River and on the Oregon Railway & Navigation Company. It has a population of 4,000, and is the

PICKING STRAWBERRIES, HOOD RIVER VALLEY.

trade center of a large agricultural region. It has good schools, an academy, banks, brick and stone buildings, flour mills, two large wool scouring establishments, and water works. The city is one of the great wool shipping points of the United States. A boat trip on the Regulator Line from The Dalles to Portland is most delightful.

Hood River is a place of great prominence as a health and pleasure resort, the climate is of special value to invalids, and the vicinity possesses many remarkable attractions in the way of magnificent scenery, being the nearest point of access to Mount Hood and Mount Adams. It is a place much celebrated for its apples and strawberries, both of which are delicious. Here is located the picturesque and famous Cloud Cap Inn, a structure built of fir logs, and supplied with everything that is attractive to the traveler. Four miles from the Inn is the summit of Mount Hood. Shanico, on the Columbia Southern, is a great wool center and at present the outpost of the upper Des Chutes country. The Warm Springs Indian Reservation occupies a part of the southern end of the county.

Grant County lies west of Baker County and on the south and west slopes of the Blue Mountains. Railway connection has been made with Baker City via the Sulphur Valley Road, which is now being extended along the John Day River. This county is somewhat mountainous, but covers the fertile valleys of the three forks of the John Day River. Stockraising is its principal industry, there being 15,000 cattle and 100,000 sheep in the county, large shipments being made annually. The sawing of lumber is now opening up on account of the increased transportation facilities. This county, being away from the general line of travel, offers a good opportunity to the home-seeker. Canyon city is the county seat, and is now reached by rail.

Wheeler County lies west of Grant County, covering the southwestern end of the Blue Mountains and the bend of the John Day River. Its characteristics are about the same as Grant and Gilliam counties; it is a vast bunch grass region, well watered, and now used principally for ranging stock. This county also offers good opportunities to the homeseeker. Fossil, the county seat, is an inland town, located on Cottonwood Creek, in the northwest part of the county.

Crook County.—This is quite a large county, being ninety miles long from east to west and eighty miles wide from north to south, and lying in the very center of the state. Its western

boundary is the summit of the Cascades and its eastern Wheeler, Grant and Harney counties. It covers the eastern slope of the Cascade Mountains and practically all the upper Des Chutes and Crooked River territory. It is an arid county, its hills are covered with grass, and for several decades has been used solely for grazing thousands of head of sheep, cattle and horses, there being, of the former, 175,000, and of the two latter, 30,000 head. This county has made The Dalles a great wool market. A large part of the county has been filed on with a view of diverting water into the arid lands near the Des Chutes River, under the Carey act, to be sold to actual

INDIAN BURYING GROUND, MEMALOOSE ISLAND, COLUMBIA RIVER.

settlers in 160 acre tracts. The general elevation ranges from 2,500 feet to 3,500 feet above Benham Falls, or the upper basin. It is estimated that if all these ditches are completed over 300,000 acres will come under their services. The Des Chutes River drains an immense area and the possibilities are great. The population of the county in 1900 was 3,964. Probably one of the best timber belts east of the Cascades is at or near the head of the Des Chutes River.

Prineville, the county seat, is located on the Crooked River, has an electric light plant, a water system, two newspapers, and 1,000 inhabitants. It is expected that the Columbia River

Valley Railway will reach this place soon and that the Corvallis & Eastern Railway will cross the county on its way east and probably form a junction at this point.

Malheur County is in the extreme southeastern corner of the state. It is another large county, being sixty miles wide and 120 miles long, having an area of over 7,000 square miles. The principal rivers are the Owyhee and Malheur, both of which are large streams. The surface of the county is of a high altitude and very dry. The lands along the streams are quite fertile and frequently spread into grass valleys of considerable width. Those along the two large rivers are considered the best in the county. The United States government has been investigating this section and the report is that irrigation is feasible over small areas. There is much government land available. Considerable placer mining has been carried on from time to time from the date of the early settlers crossing this county, and there is a prospect of good mines being opened. Huntington is the nearest railway point. There are 40,000 head of cattle and horses and 300,000 sheep grazing in the county.

Vale is the county seat, located on the Malheur River in the northern part of the county. There is a paper published at this place and another at Ontario.

Harney County is one of the southern tier of counties lying west of Malheur. It has a total area of 9,986 square miles, more than the states of Rhode Island and Massachusetts together, and has a population of 3,000. Its surface is made up of rolling hills, deep canyons, the lofty Steins Mountains and lakes and streams. The scenery here is unsurpassed, the climate is arid, and the soil is good along the creek bottoms, producing a variety of grasses. The crops raised are wheat, barley and rye. No irrigation has yet taken place. Sixty thousand head of cattle, as many sheep, and 15,000 head of horses are now being grazed. Huntington, on the Oregon Railway & Navigation Company, is the nearest railroad point. Burns, the county seat, has a population of 600. The western part of this county belongs to the desert tract spoken of in the general matter.

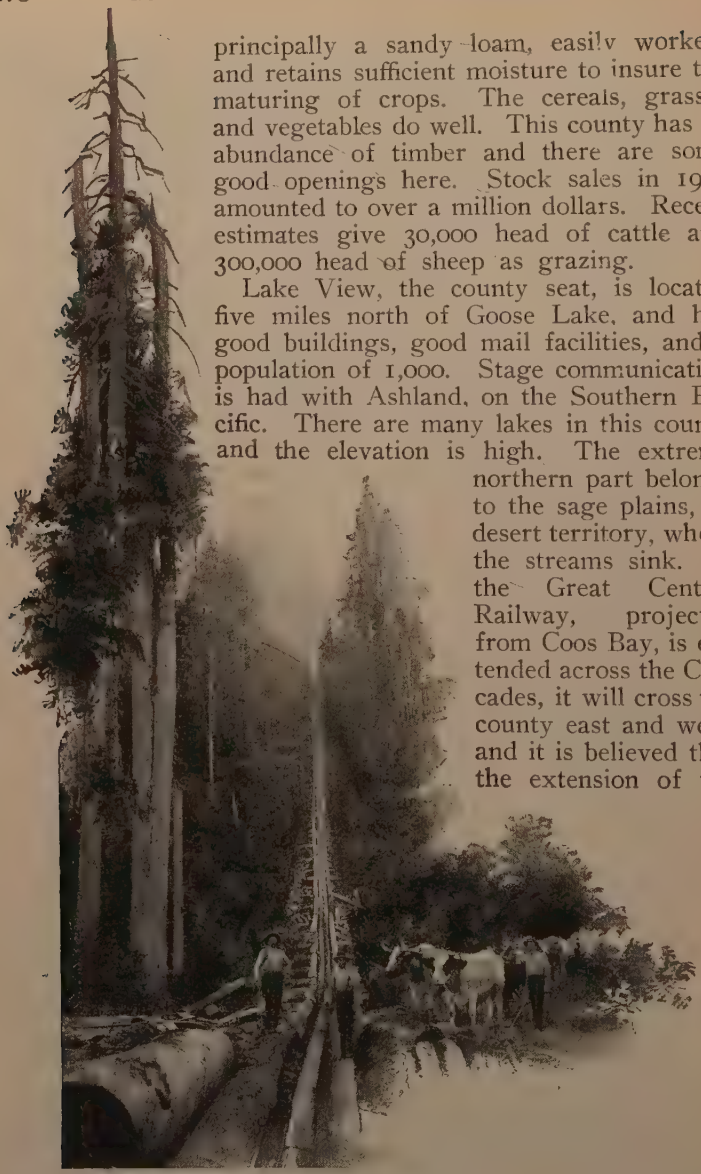
Lake County is another of the southern tier of counties and extends from the Nevada line to Crook County on the north, and lies west of Harney County. It embraces a territory of 8,000 square miles and contains some of the best farming and grazing lands in the state. The country is arid, but the soil is

FERRYING SHEEP ACROSS THE COLUMBIA RIVER.

Copyright, 1899, by Benj. A. Gifford, The Dalles, Ore.

principally a sandy loam, easily worked, and retains sufficient moisture to insure the maturing of crops. The cereals, grasses and vegetables do well. This county has an abundance of timber and there are some good openings here. Stock sales in 1900 amounted to over a million dollars. Recent estimates give 30,000 head of cattle and 300,000 head of sheep as grazing.

Lake View, the county seat, is located five miles north of Goose Lake, and has good buildings, good mail facilities, and a population of 1,000. Stage communication is had with Ashland, on the Southern Pacific. There are many lakes in this county and the elevation is high. The extreme northern part belongs to the sage plains, or desert territory, where the streams sink. If the Great Central Railway, projected from Coos Bay, is extended across the Cascades, it will cross the county east and west, and it is believed that the extension of the



A LOG CHUTE.

Columbia Southern Railway will meet it somewhere in the Silver Creek Valley.

KLAMATH COUNTY extends from Lake County on the east to the summit of the Cascades on the west, and is the last of the counties in eastern Oregon. It lies very high, mostly at at elevation of about 4,200 feet; is well watered and therefore can be irrigated, and raises grain in abundance. It has an area of about 4,000,000 acres, of which one-third is timber, estimated to possess fifteen billion feet of sugar and yellow pine. The county is pre-eminently fitted for stockraising and is noted for its stock shipments, the cattle far exceeding the sheep. It is one of the most attractive counties of Oregon, but being without transportation its settlement has scarcely begun; it now has a population of about 4,000. In 1900 eight

THRESHED AND SACKED.

thousand acres were under cultivation, more than 100,000 bushels of grain were raised, over 100,000 tons of hay cut, 100,000 pounds of butter and cheese made, thirteen thousand bushels of fruit was picked, and 1,000,000 feet of lumber was sawed.

This county is attracting considerable attention at present, due to the near prospect of transportation, and irrigation works under the Carey act. The county is traversed by mountain streams abounding in trout, and is dotted with lakes, of which Klamath and Crater have been previously mentioned. These will certainly in time make this county a great resort. Crescent Lake, another lake five miles long, lies in the northern part; the whole county is volcanic and abounds in springs, lakes and underground rivers. Two ditches from Little Kla-

math Lake have for several years irrigated 20,000 acres of land. Four new ditches that will water 10,000 acres have been made from the forks of Sprague River; two new ditches on the Klamath Reservation will cover 50,000 acres; in addition several other projects are on foot. Alfalfa does well here and dairying has been very profitable. This county is advancing and offers good opportunities. The county seat is Klamath Falls, the population of which is about 700. Two papers are published here and it has a stage line to Ashland, on the Southern Pacific, the air line distance being fifty miles.

THE WILLAMETTE VALLEY.

The counties of this valley are Multnomah, Clackamas, Marion, Linn, Washington, Yamhill, Polk, Benton and Lane, and comprise all the territory west of the Cascade Mountains lying between these mountains and the Coast Range, and extending from the Columbia River to the Calapooia Mountains, the dividing ridge between this and the Umpqua Valley on the south. This is the principal valley of the state, and constitutes the wealthiest portion of Oregon. It is drained by the Willamette River, which is navigable for 150 miles. The valley has an average width of sixty miles and an area of 7,800 square miles. From the Coast Range flow the Coast Fork, the Tualatin, Chehalem, Yamhill, La Creole, Luckiamute, Marys, Long Tom and Calapooia rivers, and many come in also from the east, or Cascade side. Some of these rivers are navigable and each drains a considerable country. The flanks, or slopes of this wonderful valley are covered with forests, valuable for lumber. The elevation of the center of the valley ranges from seventy feet at the base of the falls at Oregon City, to 400 feet at the southern part of the valley. The level bottoms of the valley are mostly prairie land, but surrounding this is a belt of rolling land, verging into the hills and mountains. This is a very valuable part of the valley, has a very rich soil, and its products are more diversified than those of the lower valley. These foot-hill lands lie at an elevation of from 500 to 2,000 feet, and have been found especially adapted to fruit. The low altitude of this valley and its mild and moist climate make all kinds of products grow in abundance—the cereals, vegetables, hops, fruits, and everything common to a temperate clime. In 1900 it produced 2,700,000 bushels of wheat.

We will describe the counties along the east bank of the

BELLE OF WISHRAM. THE BEADED DRESS SHE WEARS IS OF GREAT VALUE.
Lee Moorhouse, Am. Photo. Pendleton, Ore.

Willamette first. The land in Multnomah County, lying in the Columbia and Willamette valleys, is rolling, but mostly valley land, and is devoted to hop raising and gardening, being so near the city of Portland. Lumber manufacturing is carried on extensively both on the Columbia and Willamette at Portland.

Portland is a beautiful city of 125,000 inhabitants, situated on the Willamette River, twelve miles from its junction with the Columbia, and 110 miles from the ocean. It is the chief city of Oregon, and, lying so near Washington, controls much of that trade in addition to the trade of Oregon. The claim is made, and it seems to be well established, that Portland is one of the wealthiest cities per capita in the United States. Large steamers and sailing craft from all parts of the world come to the wharves here for wheat, flour and lumber. Lumber is manufactured on a vast scale and flour milling is one of the largest industries. In addition to the water communication by steamers on the Columbia and Willamette rivers, and the ocean fleets sailing to domestic and foreign ports, Portland is a great railway center. The Southern Pacific lines not only ramify the Willamette Valley, but are a part of a through system to the south and to the east. To the north the Northern Pacific connects with Puget Sound and British Columbia points, and is a part of the vast railway system throughout the northwestern states to the great lakes. The Oregon Railroad & Navigation Company, whose lines pass up the Columbia River, joining the Union Pacific lines at Huntington, and by the north and south route at Pocatello, give a choice of route to St. Paul through Montana or eastward direct to Chicago. This road reaches the vast wheat fields of the Columbia Basin through the great gorge of the Columbia, thus saving the mountain climb of the other railways, and makes another eastern connection at Spokane. There is strong probability of a bridge spanning the Columbia River at Vancouver, which will allow the cut-off line of the Northern Pacific to enter the city without making the circuitous route by way of Puget Sound. The Columbia River & Astoria Railway reaches Astoria and the ocean, and thus all points of the compass are covered.

The shipments of wheat to Europe have been regal; of flour to the Orient vast, and the largest of lumber cargoes that have ever been sent from any port in the United States have gone to Vladivostock and other Oriental, South American and South African ports. The imports have also been large, comprising

PORTLAND, OREGON, FROM PORTLAND HEIGHTS.

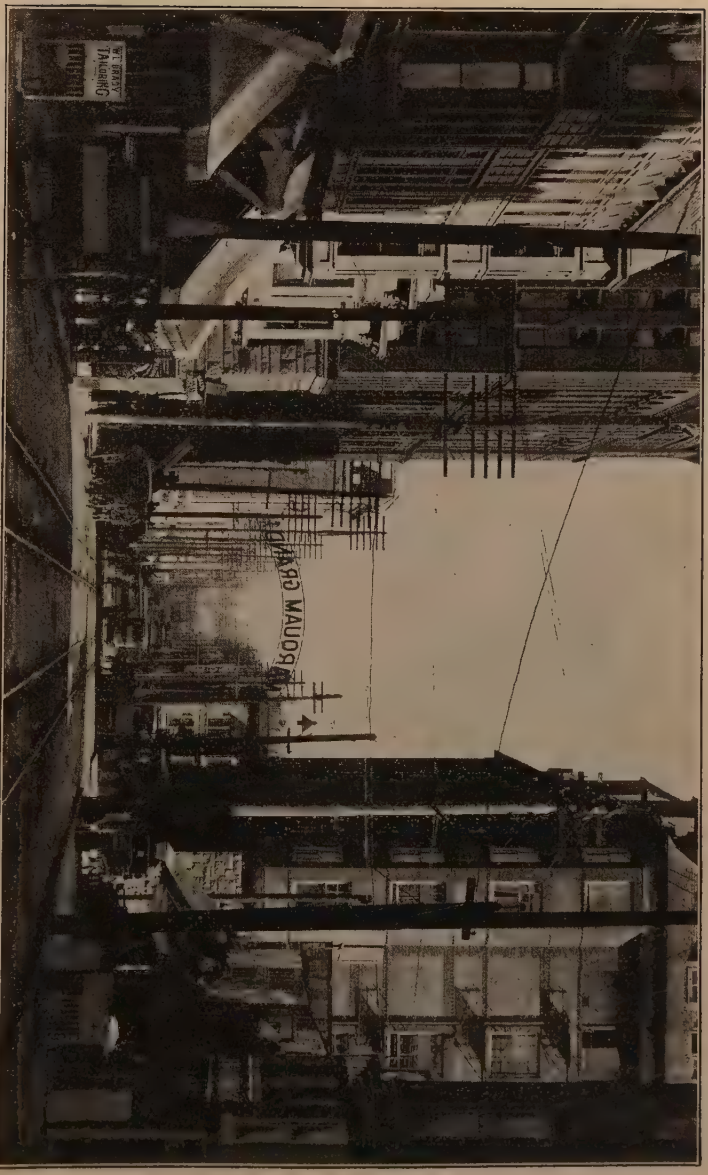
such articles as tea, coffee, sugar, silks, rice, etc. Fifty-three steamships, with an average capacity of 5,000 tons, left the Portland docks with export cargoes in 1901. They carried, besides wheat and lumber, flour, cotton, paper, beer, fish products, fruits, stock, wool and miscellaneous merchandise. In 1902 fifty-five such ships cleared from the Portland docks. Thirteen ships took 36,000,000 feet of lumber, an average of nearly 3,000,000 feet to the cargo. Craft carrying grain only from this port numbered 130. The fleet in this enormous business covers ships, both steam and sail, of all sizes, and under almost every flag, the outgoing and returning cargoes making up a mighty commerce from this port. Portland claims for September, 1902, a record breaking month on grain exports, a total of the cereals of 1,177,330 bushels having been exported. More than one million dollars was spent in 1902 in improving Portland's harbor.

The only water-level pass through the mountains, from Mexico to British Columbia, is occupied by the Oregon Railroad & Navigation Company, and this has had as much influence as any in making Portland the financial and commercial center it is to-day. New and great ships are being added to the present fleet to connect with the Harriman lines, and the city itself is reaching out on every hand.

The latest movement for extension and notice to the world is the great Lewis and Clark Centennial and Oriental Fair, to be held in Portland in 1905, commemorative of that famous expedition which contributed so much to the winning of the Oregon Country to the United States. This expedition is treated in the early history of the Northwest. The Fair is in the hands of a strong executive board. It has the approval and support of the people of the Northwest, and its success is assured.

Portland is a city of refinement and fine residences. Its hotels surpass any in the Northwest; its public buildings are substantial and ornate. Its educational institutions are many and its modern improvements equal to any eastern city. Portland is an extremely healthy city, the sanitary requirements being the best, the water in use being procured from the clear running streams on the sides of Mount Hood. The climate is salubrious.

The jobbing trade of Portland for 1902 was $150,000,000, the value of the manufactures $35,000,000, and about one-fourth of the wheat of the entire Pacific Coast has been shipped



MORRISON STREET, PORTLAND, OREGON.

from this port. The city boasts of 1,500 business firms, rated at $50,000,000, while its bank clearances for 1902 amounted to $151,000,000. It has four national banks and ten private banks, the deposits in which aggregate over $25,000,000. The city has an able and enterprising press, consisting of newspapers, morning and evening dailies and weeklies, and commercial and financial papers.

To see Portland rightly one should take the street car to the highlands above the city on the west, where, on a clear day, can be seen a wide expanse of territory. In the immediate foreground the city itself, with the Willamette River and its foreign fleets, separating the eastern and western parts; far to the right rises majestic Mount Hood; still farther to the south Mount Jefferson; to the left and north of the Columbia River, Mount Adams; farther to the left, appearing almost at your very door, stands Mount St. Helens; while very far to the north the top of grand old Mount Rainier can be seen—five in all, a procession of snow-clad peaks unequaled in any country.

A move is now on foot to build an electric road from Portland to Mount Hood, to be completed in time for the exposition. Very interesting trips can be made from Portland to Willamette Falls, Astoria and the mouth of the Columbia River, by steamers and by rail, also to Vancouver, Washington, the army post and original Hudson's Bay Company fort by steamer or electric car, and last, but not least, the trip to the Cascades of the Columbia, which no one should miss.

There is a mountain climbing club, with headquarters at Portland, which calls its members "The Mazamas." It has successfully conducted outings to Mount Hood and to Crater Lake, Oregon, and Mount Adams, and also to Mount Rainier, in Washington, at stated intervals. These excursions are open to all lovers of nature. The name "Mazama" is from the Spanish, meaning mountain goat. This club has a membership throughout many states, which is limited to those who have climbed to the summit of a snow clad peak that is acceptable to the club. Mountaineering has received quite a stimulus from this organization.

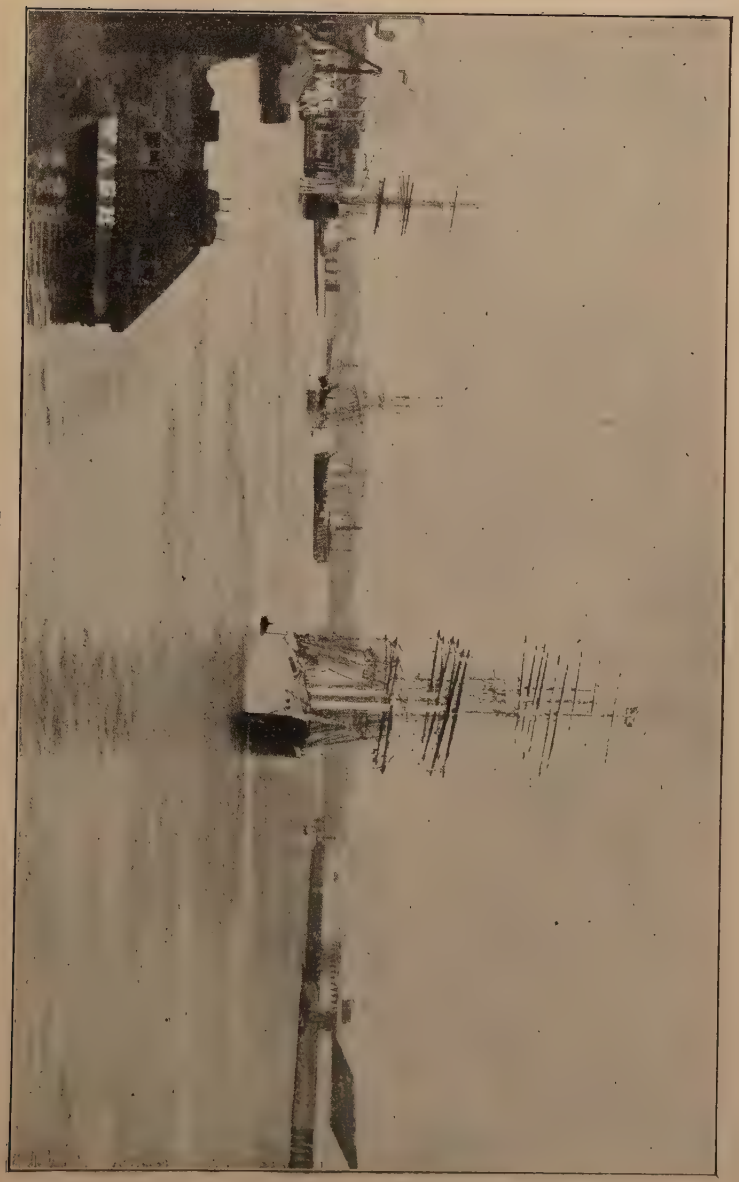
In Clackamas County the soils are either a sandy loam, a black loam, or, on the uplands, a red loam, and are generally very rich. Oregon City is the county seat and is situated twelve miles above Portland, on the Willamette River, with which it is connected by the Southern Pacific Railway, an

CHAMBER OF COMMERCE, PORTLAND.

electric line, and several steamboat lines. The falls of the Willamette River here afford as fine a water power as there is in the United States. This makes Oregon City a manufacturing point. The horsepower of the falls is 50,000 as against Minneapolis' 20,000. Woolen, flour, pulp and paper mills, a shoe factory, and other industries, are located here, besides the plant of the Portland General Electric Co., one of the largest of its kind in the west. These plants employ altogether more than 1,000 men. The population within a radius of one mile is about 6,000. Boat transportation is afforded up and down the river, as locks have been constructed, which admit steamboats to the upper river.

The western part of Marion County is very level, is mostly good farming land, and aggregates about 450,000 acres. The soils are much more diversified, and the lower lands are much damper than the hilly lands, which makes two distinct seed times and harvests. This is distinctively an agricultural, stock and dairy county. Salem is the county seat of Marion County and the capital of the state. It has a population of about 12,000, is located on the Willamette River and the Southern Pacific Railway. It has, besides the capitol, other public buildings—a city hall, federal building, insane asylum, penitentiary and state blind school. Salem is a handsome city, with broad streets, and is a noted social center. All lines of business are represented. In manufacturing there are woolen mills, flour mills, wooden and metal ware and other mechanical plants. A large warehouse for the reception of wheat and other produce has been established, and a fruit cannery is also located here. The city has boat and rail connections.

Linn County is a large and good agricultural county, comprising 2,400 square miles. It still has a vast area of timber land, to the manufacture of which quite a share of the population of the eastern part of the county are devoting themselves. The general character of the soil is a dark loam, and wears well. All kinds of grain (except corn), fruit and vegetables, are successfully grown, wheat being the staple cereal throughout the valley. This being about the heart of the valley it may be well to state that the range of the mercury here is from 30° to 85°, although there are some exceptions. Snow is seldom seen, and there is ample rainfall. Good stock has been bred in most of the counties and especially in this one, and dairying is one of its leading assets. Farms on the prairie can be bought for $30 per acre, and in the foot hills for from $5



PORTLAND HARBOR.

to $15. These prices are a good average for so old a settled country. There are openings in the valley for more saw mills, wood factories of different kinds, and canning establishments. The Southern Pacific Company's lines traverse the county north and south, and the Corvallis & Eastern Railway east and west. The western terminus of this road is at Yaquina Bay, on the Pacific Ocean, and the eastern terminus is near the summit of the Cascade Range. It is expected the road will cross the mountains at Minto Pass and form a short line through eastern Oregon. Albany, the county seat, with a population of 4,200, is situated on the Willamette River and at the junction of the two railways. It has graded schools, a Presbyterian College, a Catholic Academy, woolen mill, two flouring mills, cheese factory, iron works, tile factory, and fruit dryers. A high bridge, costing $100,000, crosses the Willamette River.

Lane County is the most extreme southern county of the valley, lying against the Calapooia Mountains, and extending from the Cascade Mountains to the ocean, crossing the Coast Range. It covers the entire headwaters of the Willamette River, with all its branches, and the Siuslaw and Idds rivers, which empty into the sea. It covers an area of about 7,000 square miles, which is exceedingly diversified, a large part being susceptible to cultivation. The mountain part is covered with dense timber and in consequence lumber manufacturing is extensive. The estimated standing timber is about 29,000,000,000 feet—more than any other county in the state. One-third of the valley is prairie land and the balance foothills and mountains. The foothills afford fine grazing, and are also adapted to fruits. Wheat has been the principal product, but fruits are now excelling. Hop growing is being practiced quite extensively and there are now about 1,000 acres in hops. The numerous valleys and hills afford excellent opportunities for diversified farming. Eugene, the county seat, is located on the Southern Pacific, and is the head of navigation on the Willamette River. It has a population of 3,236, good buildings, numerous factories, two tanneries, and water works. It is the seat of the State University of Oregon, but the adjunct Schools of Medicine and Law are located at Portland. Siuslaw Bay admits vessels of fair size, which trade with San Francisco and Portland, the principal commodities being salmon, lumber, and agricultural products. On the river of this name are saw mills, canneries, the thriving town of Florence, and considerable land adapted to fruit and dairying.

The counties lying on the west bank of the Willamette River will now be taken up. After Lane County comes Benton, a small county lying between the river and Lincoln County, which lies on the coast, and is traversed by the Southern Pacific through its northern part, and the Corvallis & Eastern from east to west. The county is more or less mountainous, but along the valleys of the Marys and Willamette rivers is well settled and improved. This is quite a stock county. Hops, fruits and berries are raised in large quantities. Corvallis is the county seat, situated on both the roads mentioned and on the Willamette River. It has a population of 1,819, is the seat

STEEL BRIDGE OVER THE WILLAMETTE RIVER AT ALBANY.

of the State Agricultural College and other educational institutions.

Polk County has an area of 750 square miles, of which 112,500 acres were in cultivation in 1900, from which was produced 1,300,000 bushels of wheat, 1,800,000 pounds of hops, 1,500,000 pounds of dried prunes, and 11,000,000 feet of lumber. This tells the story of many of the counties. The soil on the hills is a reddish loam, and in the valleys a dark loam, all being very fertile. This section was the seat of the first white settlement west of the Missouri River. Dallas is the county seat, situated on the Southern Pacific, whose two lines traverse the eastern part of the county north and south. A

local railroad has been built from Dallas southwest into the mountains, which serves as a commercial and logging road combined. Dallas is making great progress.

Yamhill County, termed the banner county, from its agricultural display at the state fair, contains an area of 756 square miles and has a population of 13,420. It covers the valley of the Yamhill River and other smaller valleys. Steamboats, by the aid of locks, ascend the Yamhill to McMinnville, the county seat. This is another of the old settled counties, dating back to the '40's. There are under cultivation about 117,000 acres of land, which produce bountifully. Most of this county is prairie land. In 1902 1,400,000 bushels of wheat was produced; 1,200 carloads of hops; 250 carloads of prunes; 200 of apples; ninety of pears, and twenty-five of cherries; besides which many carloads of peaches, plums and berries were shipped. The hop culture of Oregon is mainly centered in the counties of Marion, Yamhill, Clackamas, Polk and Washington, and the estimated crops of these counties in 1900 was 3,000,000 pounds. Oregon had 15,000 acres under cultivation out of the 54,000 acres in hops throughout the United States, New York leading with 25,000; California, 7,000; Washington, 6,500. When hops bring ten cents per pound the net profits of the farmer is about $40 per acre, and many years the price is double and even more. McMinnville, the county seat, is located on the Yamhill River, and on the Southern Pacific Railway. The population is 1,420. It has two banks, two flour mills, water and light plants, good schools, and a Baptist College. Two lines of the Southern Pacific Railway traverse the county and cross at Whiteson.

Washington County is the last of the true Willamette counties. It extends from the Coast Range to the very suburbs of Portland. It is located in a basin, lying between the Chehalem Hills, the Coast Range and the Portland Mountains. The soil is a loam, underlaid with a clay subsoil. The county covers many valleys, but mainly that of the Tualatin River. There are large tracts of timber in the mountainous portions. This is a good agricultural county, well adapted to all kinds of products and to dairying, especially since the proximity to Portland affords the farmer the opportunity of driving to the city, thereby saving transportation charges on his product. Hillsboro is the county seat, situated on the Southern Pacific, and has a population of 1,200. It owns its water works and electric light plant. There are opportunities here for those

STEAMER "REGULATOR" PASSING THE PALISADES, COLUMBIA RIVER.

who desire to make a thriving suburban city, for the distance of twenty-four miles from Portland will admit of its being made a residence town.

Columbia and Clatsop Counties.—These counties lie along the Columbia River, being bounded on three sides by the river and the Pacific Ocean. Columbia County contains 723 square miles, and is mostly covered with a dense growth of fir, from which it is not unusual to cut from 80,000 to 100,000 feet of logs from a single acre, and from 6,000,000 to 12,000,000 feet from a quarter section of land. The soil along the Columbia River bottoms is alluvial, and in the interior a clay loam. The chief industries are lumbering, stockraising, dairying and fishing. The county seat is St. Helens, on the Astoria & Columbia River Railroad, and has a population of 1,258. There are several canneries and mills located along the Columbia River.

Clatsop County is the extreme northwesterly county of the state. Its surface is somewhat mountainous. In the center stands a prominent mountain known as Saddle Mountain, from which all the rivers radiate to the Pacific Ocean, and the Columbia and Nehalem rivers. This county is cut up by navigable bays and rivers, which afford access to most parts. The Lewis and Clark River, which reaches the Columbia west of Astoria, is made famous by the party which wintered on its west bank, two miles above its mouth, in 1805-6. This county is covered by dense forests of fir, spruce, cedar and hemlock, except the tideland and the Clatsop plains, which extend along the seashore for twenty miles, with an average width of two miles. These plains produce grass, oats, fruits and vegetables for stock. This is essentially a grass growing county, and in consequence has large dairy interests. There are some good cranberry marshes on the peat lands between the plains and the uplands. The greater portion of the timber is fir, but spruce is found in large quantities; also considerable curly maple, hemlock, cedar and larch. This is one of the most heavily timbered counties in the state. Game is very plentiful, consisting of bear, deer and elk, and trout abound in all the streams.

Astoria is the headquarters for the salmon catching and canning business, which is the greatest industry along the Columbia River. Nineteen canneries are located there, and nineteen other canneries are tributary to the city, representing over $2,000,000 capital, giving employment to about 5,000 men and

yielding an annual product of $3,000,000. The city in addition shipped 28,865,000 pounds of salmon in 1901, or 1,443 carloads of ten tons each, and shipments have run over 2,000 carloads per year. To the existence of this industry Astoria largely owes its being. It is estimated that during the past twenty-five years the Columbia River has yielded a value of $75,000,000 in fish, nearly all of which has been, in a manner, put in circulation in this city. There has never been a failure of this crop, and it is therefore one of Oregon's greatest and surest resources. At present fully one-half of the

NORTH HEAD LIGHTHOUSE, COLUMBIA RIVER.

population of Oregon and Washington, living near the mouth of the great river, are engaged in this pursuit. The spring season, or run, of salmon, lasts for four months, from April 15 to August 15, meaning $750,000 monthly to those interested. The salmon are now not only canned, but pickled, and also frozen, for shipment to different parts of the world. One and one-half million pounds of steel-head salmon were frozen in 1902.

Astoria's beginning dates back to 1811, the landing of the Astor party. Owing to traitorous partners, the fur business

became a failure, and there was not a white family left on the bay in 1846, so its business history is after all one of comparatively recent date. The city is located on the south side of the great bay or mouth of the Columbia River, which is seven miles in width at this point. The city is built partially over the tide flats on piling, and partly on the hillside. The residence portion lies higher up. It has a population of about 10,000 people, who represent probably every nationality on earth. It is the second city in size in the state, and certainly with its commanding position as a portal to the ocean, must become a maritime city of importance. The resources and position of this city should support a population of at least 100,000 people.

FISHING BOATS ON THE COLUMBIA.

Its saw mills must manufacture into lumber its extensive forests; its fisheries must continue. Mr. A. J. Johnson, the government forestry expert, says: "The mouth of the Columbia River has the greatest body of timber tributary and available of any point in the world." The estimate of timber standing accessibly at this point is 75,000,000,000 feet. The climate here is mild, the mean maximum for August being 68° and the mean minimum for January 35.7°. The precipitation for the year was 67.69.

Astoria is connected with Portland and the upper river by several lines of steamers, and with Portland by the Astoria &

ASTORIA, OREGON.

Columbia River Railway. It is a lively cosmopolitan city, with all needed sanitary improvements. Fort Stevens is located at Point Stevens. From this point a jetty is being built by the government, projecting four and a half miles into the Pacific Ocean, at an expense of $5,000,000, to deepen the water on the bar at the mouth of the river. There are many small stations on the Astoria & Columbia River Railway along the ocean beach, from Seaside to the fort. These offer summer outings for the people, while on the Washington side of the river north of Ilwaco is perhaps as fine a stretch of beach as can be found in the United States. This is reached by the Oregon River & Navigation Co. steamers and a short line of railway.

Tillamook County lies on the ocean south of Clatsop and has sixty miles of sea coast, with six different rivers discharging into the ocean. The Wilson River discharges into Tillamook Bay, which at high tide has an average of sixteen feet of water. Each of the six rivers referred to flows through a rich timber belt, and each furnishes a large amount of rich bottom land suitable for agriculture. This county has become a great stockraising and dairy center, for which it is particularly adapted. There are greater undeveloped resources here than in any other part of the state, perhaps, and there are good openings for men with small means. The rainfall is about the same as Clatsop County, being not far from 100 inches. Tillamook, the county seat, has a population of 834, is located on Hoquarton Slough, at the head of the bay, and is a thriving town.

Lincoln County lies on the Pacific Ocean south of Tillamook County. From the summit near the boundary with Benton County rises the Yaquina River, which flows westerly and empties into the bay of the same name. The Alsea River flows westward through the southern part of the county, and the Stiletz through the northern part. Along these streams farms are located, producing the cereals, fruits and vegetables. The Stiletz Valley is very rich, but most of it belongs to the Stiletz Indian Reservation. The Yaquina River is navigable for twenty miles, and steamers enter and depart for San Francisco and other ports. The principal towns are Newport, Yaquina and Toledo. The Corvallis & Eastern Railway makes its terminus here. There are canneries at Newport, Alsea and Kernville. There is much business transacted at the mouth of the Yaquina and in summer time it is a resort for all the

A SALMON CANNERY, ASTORIA, OREGON, CONTAINING 1,250,000 CANS.

upper Willamette Valley. Toledo, the county seat, on Yaquina Bay, has a population of 302. The only places in the United States where the rock oyster is found are at Newport and south along the Coos County coast. These oysters are rare and finely flavored. They are found in cells in the sand rock below high tide.

Douglas County lies mainly between the Calapooia Mountains, on the north, and the Rogue River Mountains, on the south, and extends from the Cascade Mountains to the ocean, covering the valley of the Umpqua River and its tributaries.

AN OREGON DAIRY FARM.

This is the beginning of what is ordinarily termed southern Oregon, which is the territory encompassed by the Calapooia the Siskiyou mountains and extending from the Cascades to the ocean. This county has a frontage on the ocean of only twenty-five miles, the Coast Range of mountains coming well down to the beach, leaving little agricultural country between the beach and the mountains. The latter are densely timbered and lumbering is carried on extensively. The estimated standing timber in this county is 24,000,000,000 feet, the second largest stand in the state. The mouth of the Umpqua

LOGGING IN THE GOOD OLD WAY.

River furnishes an excellent harbor for coasting schooners. Salmon canning, lumbering, placer and quartz mining are among the principal industries, although agriculture and stock raising are prominent. There are 21,150 cattle and 30,000 sheep grazing in this county. The total output of gold for southern Oregon for the year 1900 was $1,630,000, of which Douglas County furnished $280,000. Oil has been found here and several wells have been sunk.

Within the grand valley of the Umpqua, in the middle and eastern part of the county, are many valleys, plains, gorges and hills. There are two classes of soil—the sandy loam on the river and creek bottoms, which is very rich, and an upland loam, on the benches, also rich but not so lasting. The foothills have fine grazing lands and in this county there is game in abundance. The cereals, grasses and fruits all do well here, and dairying is becoming well established. In 1900 the county raised 300,000 bushels of wheat, 205,000 pounds of hops and 150,000 pounds of butter and cheese were made. There were shipped $200,000 in value of prunes, $175,000 in cattle and $1,000,000 in value in lumber. The Southern Pacific traverses the county north and south.

Roseburg, the county seat, situated on the Southern Pacific Railway, and the Umpqua River, is supposed to be the junction with the proposed Great Central Railway from Coos Bay. It has a population of 3,000, good hotel accommodations, two banks, two flour mills, electric light, water and sewerage systems. The Soldiers' Home and the United States land office are located here. Oakland and Drain are located on the Southern Pacific, the latter place having the State Normal School, and there are other good towns in the county.

Coos County borders on the Pacific Ocean for about fifty miles, lying east and south of Douglas County, but separated from it by the Umpqua Mountains, a part of the Coast Range. Coos Bay is an important harbor, from which regular lines of steamers ply between Marshfield and San Francisco, taking coal from the extensive mines near by, other lines taking lumber, agricultural and dairy products and fish. The Coos Bay, Roseburg & Eastern Railroad, operated as a coal road, extends from Marshfield to Myrtle Point, the head of navigation, on the Coquille River, which drains all the southern portion of the county and reaches the ocean at Bandon. On this river are located several mills and canneries, and there is a daily steamer service. Much gold in early times was taken out of

the black sands on and near the beach, and a portion of the population still follow beach mining as a means of livelihood. The county has a wealth of timber, being estimated by different experts, taking into account perhaps different sizes, all the way from twelve to twenty billion feet, consisting of about seventy-five per cent fir, the balance white cedar, hemlock, spruce, etc. These forests extend north of Coos Bay and along the branches of the Coquille River. The white cedar found in Coos, Curry, Douglas and a part of Josephine counties, on the west side of

CABBAGE ROCK, COLUMBIA RIVER.
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the Coast Range, possesses the finest qualities of any timber known to commerce. The percentage of clear lumber is very high, the wood is very sound and has a highly aromatic odor, and is greatly prized for its lasting qualities. This timber cannot be equalled on the continent. The common name for this

tree is "Port Orford Cedar." A number of oil wells have also been sunk in this county.

Coos Bay is pre-eminently the best harbor in Oregon south of the Columbia River, and at this point the projectors of the Great Central Railroad, a road intended to connect with eastern lines at Salt Lake, have purchased an extensive tract of land, covering a large portion of the shore line of the bay, and are developing the country at a very fast rate. Surveys have been made, other lands and locations obtained at various points, and to all appearances Coos Bay is soon to become the terminal of a transcontinental system.

Good agricultural lands are found along the creek and river bottoms, and the uplands furnish good grazing lands. There

ASHLAND.

are some excellent orchards and many dairies in the county. In mining the gold output for this and Curry County was $275,000.

Empire City is the county seat, situated on Coos Bay, its population being 185. Marshfield is the principal town, where are located coal bunkers, three saw mills, a tannery, furniture factory, etc. The place has a population of 3,500. Other places are Myrtle Point, Coquille City, Bandon and Bangor, the latter being the new town established by the Great Central interests.

Jackson, Josephine and Curry Counties constitute the three southern counties and cover the valley of the Rogue River. The first named embraces the upper valley of the Rogue

River and it tributaries; the second, the middle valley and tributaries, and the third, the lower valley and the ocean beach. The arable lands in Jackson County comprise the valley, table and rolling lands. All the cereals do well and fruits have an especial record. The climate here is much warmer than in the counties to the north, and corn grows fairly well. Most of the level land lies at and near the town of Medford, perhaps the largest of any body in southern Oregon, this being at the confluence of Bear Creek and Rogue River. Medford shipped 60,000 crates of peaches and 2,600 crates of raspberries in 1902. Jacksonville, the county seat, has a population of 653;

UNLOADING SALMON.

Medford, about 3,000, and Ashland, 2,634. A state normal school is located at Ashland. The gold output for 1900 was $400,000, mostly by hydraulic plants.

In Josephine County the valleys are narrower, but fruits are grown as well as in Jackson County, and it may be said that both are the home of the peach. Tobacco is quite successfully grown. Gold was first found in Oregon at Kirbysville and gold mining is carried on extensively, the output for 1900 being $675,000. The county seat is Grants Pass, situated on the Southern Pacific, which road traverses both Jackson and Josephine counties, also on the Rogue River, and has a popula-

tion of 2,290. This is a stirring place, with good business blocks and lumber and mining interests. The Rogue River, which narrows to a gorge between this point and Medford, widens again to the west, and with some tributary valleys makes quite an agricultural area, which is devoted largely to horticulture. The town of Grants Pass gets its name from the fact that Grant, with his army, camped here in 1852, on his expedition from the Columbia River to San Francisco overland, by way of the Willamette and Sacramento valleys.

Curry is the most southwestern county of the state, and claims the distinction of being in Cape Blanco, the most westerly point of the United States. The county is very mountainous, the Rogue River Valley becoming quite narrow, but the river affords at its mouth a harbor for coasting schooners. Gold Beach, the county seat, has a population of eighty-three, and Port Orford 227, both being on the ocean. Washing the elusive gold sands of the beach, some interior mining, and dairying occupy the population principally. A salmon cannery is located on the Rogue River. The estimated timber here is eight billion feet. The whole country is within the coal belt, and it is thought great wealth will be derived from this source.

The southern part of the Cascades sends up a rugged solitary shaft 6,000 feet above sea level, known as Pilot Rock. It stands on the line between Oregon and California, and is seen for 150 miles. This is a very prominent feature of the country. Crater Lake, in Klamath County, is reached from Medford.

BRITISH COLUMBIA.

British Columbia is the most westerly, the largest, and the only Pacific maritime province of the Dominion of Canada. It lies immediately north of the states of Washington, Idaho and Montana, entirely west of the Rocky Mountains in its southern part, and extends from the 49° to the 60° of north latitude. It includes Vancouver Island, Queen Charlotte Islands and many smaller islands. It has a length of 100 miles, with an average width of 450 miles, constituting an area of 383,300 square miles, and it had a population in 1901 of 178,657.

The early history of the entire British Northwest Territory adjoining the United States is interwoven with that of the United States Pacific Northwest. That history begins with the voyage of Captain Cook in 1778, when Nootka Sound, on Van-

SIWASH ROCK, NEAR THE ENTRANCE TO VANCOUVER HARBOR, B. C.

couver Island, was discovered, which, with the expeditions sent out by other nations, has been mentioned in the early history of the Oregon Country.

In 1795 the territory now included in the province of British Columbia became the acknowledged possession of the British Crown. Sir Alexander McKenzie crossed the continent and reached the upper valley of the Fraser River and the Pacific Ocean by way of the Peace and Salmon rivers in 1792, thirteen years before Lewis and Clark arrived at the mouth of the Columbia. The Northwestern Fur Co. followed, and after many mishaps established themselves and in 1821 formed a union with the Hudson's Bay Co., and had much to do with the civilization and advancement of the country. A treaty was made with Russia in 1825 to determine the boundary between the Russian Alaska coast sealing and fur trading, and the fur trading of the interior. In 1846 the Ashburton treaty settled the boundary between the United States and Canada. In 1871 British Columbia became a province of the Dominion of Canada upon the stipulation that railway connection should be established with the east. This was accomplished in May, 1887, when the main line of the Canadian Pacific Railway was opened for traffic. Victoria was made the capital, it having long held the commercial supremacy of the country west of the Rocky Mountains.

The building of the Canadian Pacific Railway was one of the greatest feats of railway construction on record. It was built through an entirely uninhabited country, and the difficulties of railway construction at the pass where the railroad crossed the Rocky Mountains seemed almost insurmountable. For 500 miles through these mountains the Selkirks and the gorge of the Fraser River through the Cascade Mountains afford perhaps as grand and wild scenery as can be found upon the American continent.

A road farther to the north has seemed more feasible and will no doubt be built. It will reach the Pacific Ocean at Port Simpson, 300 miles north of Vancouver. The line of this road from its eastern terminus, Quebec, passes north of Lake Winnipeg through Athabasca and North Alberta, covering 2,380 miles in its span of the continent from the Atlantic seaboard to the Pacific. This road will no doubt eventually reach the Yukon territory, from which connection can be made with the Siberian railway at Cape Prince of Wales, on Bering Strait, by way of Nome, thus bringing into reality the long-heralded route from

New York and other eastern cities to St. Petersburg and Paris by rail.

The Province of British Columbia is governed by a lieutenant-governor, appointed by the governor-general of the Dominion, and who is assisted by an executive council of six members. The province has a legislature consisting of a single chamber of thirty-four members, and it is represented in the parliament at Ottawa by three senators and six members of the house of commons. The schools are free and have no church alliances.

The province is divided into local districts as follows: East and West Kootenai, Yale, Lillooet, New Westminster, Cariboo and Cassiar on the mainland, and Comax, which includes the northern half of Vancouver Island and a portion of the mainland opposite, Alberni, Nanaimo, Cowichan and Esquimalt on Vancouver Island.

The distinctive features of British Columbia are its indented sea coasts, its islands and its mountains. Almost one-half of the province is cut off from access to the sea by a narrow strip of United States territory known as the Panhandle of Alaska, and which stretches from Mount St. Elias to the southernmost point of Prince of Wales Island. Southern British Columbia is divided into two great drainage basins, the eastern, or sources of the Columbia River, and the western, or valley of the Fraser River, which is the main river of the province. The Rocky Mountains, which bound southern British Columbia on the east, have a width of about sixty miles, and an average height of about 8,000 feet, the highest peaks being Mount Brown (16,000 feet), Mount Hooker (15,700 feet) and Mount Murchison (13,500 feet). To the west are three shorter ranges of mountains, the first being the Purcell Range; the Selkirk Mountains constitute the second range, and the Gold Range the western, which borders on the interior plateau and extends farther north, expanding into the Cariboo Mountains. The Selkirks are much the highest of these three mountain ranges, Mount Sir Donald having an altitude of 10,645 feet, Mount Macdonald 9,440 feet and Mount Tupper 9,030 feet.

In the numerous valleys enclosed by these mountains is developed a river system remarkable alike for its complexity and its grandeur. In the southern part of the valley, at the western base of the Rocky Mountains, the Kootenai River flows to the south, while the Columbia River flows to the north, a narrow range of mountains only lying between them. The Columbia

River sweeps around the northern end of the Selkirks and, turning southward, flows between the Selkirks and the Gold Range, receiving the Kootenai, which has visited the United States and returned, a short distance from the frontier, then passes into the United States on its long journey to the ocean. The Fraser River at first flows in a northwesterly course and then turns southward, passing through the Cariboo Mountains, the Lillooet and Yale districts, when, turning to the west, it reaches the sea at the Strait of Georgia, near the United States boundary line. The northern portion of British Columbia is a country of rough plateaus and mountains, watered on the west by the Taku, Stikeen and Skeena Rivers, by the Liard tributaries on the northwest and the streams that drain the northern valleys of the Cariboo Mountains into the Peace River. The great interior basin extends from the Rocky Mountains to the Cascades, which run parallel to and contiguous along the coast, having turned to the west and become really the Coast Range of mountains.

That region of British Columbia along the mainland of the coast enjoys a very mild climate, due to the influences of the Japan current. The western slopes of the Cascade Mountains receive the first precipitation of moisture from the prevailing westerly winds, which give abundant rainfall, and in the more northerly islands, especially the Queen Charlotte group and the coast region, an excess. Between the Coast Range and Gold Mountains are arid plains which require irrigation. On the interior plateaus the winter temperature frequently falls below zero, but the air being very dry makes the cold endurable, even in the extreme north. The mean annual temperature at Victoria is 47°, the range being from 22° to 80°, the annual rainfall being forty-one inches. At Barkersville, in the Cariboo district, the mean temperature for January is 12° and for July 49°, the rainfall for the summer months being seventeen inches and the snowfall in winter 161 inches. The rainfall in the interior increases with the distance to the north from the boundary line.

British Columbia is one of the richest and most resourceful provinces of the Dominion. It is a highly mineralized, mountainous country, with intervening valleys of arable and pasture lands, and magnificent forests. The mines are comparatively undeveloped, yet their product amounts to nearly the production of all Canada; the fisheries about one-third the total yield of the waters of the entire Dominion; and the forests one-twen-

tieth of the timber cut in all the provinces. For 1900 the value of mineral productions was $16,344,751. The largest coal workings are confined to Vancouver Island, but at Crow's Nest Pass, in the Rocky Mountains, there has been prospected with drills an area of excellent bituminous coal of 144 square miles, the aggregate thickness of the veins being 132 feet. Second to the mines are the fisheries, the value of the product for 1900 being $5,214,000. The canning of salmon and fur sealing being the leading industries, canneries are located along the coast on the Nass, Skeena, Fraser and smaller rivers. The central seat of the canning industry is on the Fraser River, where in season

CAPITANO CANYON, B. C.

thousands of boats are employed in taking the fish, there being more than fifty canneries located upon the river. The province devotes adequate attention to the preservation of the fisheries by artificial means.

The forests consist largely of the evergreen, Douglas fir and cedar, though hemlock and cypress are found in considerable quantity. The trees reach their densest and largest growth on the islands and western slopes of the Cascade Mountains, where they are said to average 20,000 feet to the acre. The estimate of the timber bearing area is 285,000 square miles, and of the

timber now standing one hundred billion feet. In 1900 the lumber cut of the province was 276,236,470 feet, of which 25,000,000 feet went east of the Rocky Mountains by rail and the remainder went to all parts of the world by ships.

British Columbia has a magnificent ocean frontage of fully 1,000 miles, has many fine harbors, the principal of which is Burrard Inlet, the western terminus of the Canadian Pacific Railway.

The Kootenai District extends north and south from the international boundary line to the big bend of the Columbia River. It is divided by the Purcell Range of the Selkirks into East and West Kootenai. Almost the entire district is drained by the Columbia River. There are great regions of mineral wealth here which in the early days yielded millions of dollars in placer mining. Besides gold, silver and copper, on the western side of Crow's Nest Pass of the Rocky Mountains, there are perhaps the largest undeveloped coal fields in North America. They are known to cover 144 square miles, and 1,000 coke ovens are now in operation. The building of the southern line of the Canadian Pacific Railway has opened up this country and afforded an outlet long needed. In Eastern Kootenai the principal town is Cranbrook, on the line of the Crow's Nest Pass Railway. It has a population of 2,000. It is located on a prairie in the Kootenai Valley and is the principal lumbering point of the district. The city is lighted by electricity, has several large stores, banks, hotels, churches and schools.

In Western Kootenai marvellously rich deposits of ore have been discovered. Many of the mining properties are fully equipped with machinery, in Trail Creek, Nelson, Kaslo-slocan, Ainsworth and other districts, smelters having been erected at the towns of Nelson and Trail. There are good openings for farmers in these valleys, and a wonderful field for the angler and hunter. The largest towns of the district are Nelson, situated on the western arm of Kootenai Lake, with a population of 6,000, and Rossland, eight miles from the boundary line, with a population of 7,000. Both are phenomenal mining towns. The Canadian Pacific main line crosses these districts amid grand scenery in their northern part.

The Yale District lies to the west of the Kootenais, from which it is separated by the Gold Range. It lies entirely within the dry belt, but within its limits are great stretches of mining, grazing, agricultural and fruit lands, which afford good openings. The development of this country is made possible

through the construction of railways in the southern and eastera part by the Canadian Pacific in its southern line and the Great Northern in its route from Spokane, Washington, to Vancouver, along the international boundary line and the Samilkameen River. The Boundary district, the Kettle River and Boundary Creek valleys, and the Okanogan, Nicola and Thompson valleys, are good sections of about the same character as the Colville Reservation in the state of Washington, heretofore described. The Yale District belongs to the bunch grass country, where wheat, fruit and vegetables are prolific. There are good farming openings and good mines in the district, and besides there is a

MINING SCENE ON PINE CREEK, ATLIN, B. C.

large mineral field to the north yet unexplored. In the Nicola Valley there are good farms and a large coal area. Thompson Valley traverses the northern part of the Yale District, where there are extensive grazing and agricultural lands. Some irrigation is being carried on in this locality, and in the Okanogan country large tracts are being brought under ditches. These lands are well adapted to fruit and berry growing. A cigar factory in the Okanogan district is claimed to be manufacturing native grown tobacco. About 40,000 head of cattle are ranging near Kamloops, and a greater number in the Samilkameen Valley.

The Fraser River traverses the western side of the district and the Canadian Pacific Railway follows the main water course. Kamloops is a division headquarters of the railroad and is the largest town in the district, having a population of 2,000. Ashcroft, on the Canadian Pacific Railway, 204 miles east of Vancouver, is the starting point for the west Lillooet district and Cariboo points. Grand Forks is the principal town in the boundary country, on Kettle River near the boundary line, and has a population of 1,500; a large smelter is in operation here. There are several good towns in this and other valleys.

The Lillooet District lies immediately west of the northern part of the Yale District. The Fraser River crosses it from north to south, as does the famous Cariboo road, the trail to the mines. This district is as yet sparsely settled, the principal settlements being in the vicinity of the Fraser River. There is a large area of fine grazing land, which is also suitable for farming, but irrigation is required. The valleys have a rich soil, where fruit can be grown successfully. The climate is fairly mild in the valleys, the cattle maintaining themselves the entire winter on the ranges.

The Cariboo District lies between Cassiar District on the west and Athabasca and Alberta on the east. It reaches from the 52° to 60° latitude, bordering the Yukon territory. The Rocky Mountains traverse it in about a northwesterly course, which makes it very mountainous in its west and northern part. The famed Cariboo mines, from which millions of gold have been taken, are in this district, and extensive hydraulic mining is being carried on. This is a great field for the prospector. The south and western parts of this district are high, rolling plateaus, mostly wooded. The climate is much like that of Lillooet. The extreme northern part has the same character as the Yukon territory. That part of the Cariboo District that is drained by the Peace River is known as the Omineca District, where rich gold placers were discovered.

The Cassiar District comprises the western portion of British Columbia west of the Cariboo District, and extends from the 51° to the 60° north latitude. It adjoins the Alaska Panhandle, circles Skagway and White Pass and adjoins the Yukon territory on the north. As it lies mostly west of the Cascade Mountains it is generally heavily timbered and difficult to travel through. The Cascade Mountains traverse its entire length. Rich mining districts have been discovered at Cassiar and at

VIEW OF VANCOUVER, B. C., HARBOR.

Atlin Lake, near the Yukon line. The navigable Skeena River rises in the Cassiar Mountains and in a generally southwest course reaches the sea, a little below Port Simpson. This is the largest river of the district, and affords the best means of intercourse with the upper interior. Two placer mining towns have lately sprung up in the district—Atlin and Pine City. These are reached by steamers to Skagway, the White Pass & Yukon Railway, and then steamers on Lake Bennett.

The New Westminster District lies along the boundary line mainly between the Yale District and the Strait of Georgia. The Cascade Mountains cross this district from northwest to southeast and make it therefore very mountainous, with the exception of the valley of the Fraser River and the deltas at its mouth. This valley is quite wide and to the south frequently overflows, necessitating diking in some parts. The rainfall in this district is ample, the soil rich and the climate mild. The country is fairly well settled, but farms can be had at reasonable prices. The Canadian Pacific Railway follows the Fraser River Valley, and the Great Northern connects Vancouver and New Westminster with Puget Sound points. Much attention is given to salmon canning and fishing in general. Timber is abundant and lumber manufacturing is carried on extensively.

Vancouver, the largest city of the district and of British Columbia and the terminus of the Canadian Pacific Railway, is situated on Burrard Inlet, a very fine tidewater harbor of the Strait of Georgia. It is surrounded by a country of rare beauty, and the mildness of the climate is all that could be asked for. It is named for the explorer of that name, is located 150 miles from the open ocean, from which it is separated by Vancouver Island, but it is nevertheless the home port of the Canadian Pacific Railway Company's line of steamers plying to all parts of the Orient, the eastern terminus of the Canadian-Australian Steamship line to Australia, and of the Canadian Pacific Navigation Company's steamers to Alaska. The inner harbor has thirty square miles of ship anchorage and 3,000 feet of docks and wharves have been built for steamship accommodation. This port is a call station of the Pacific Coast Steamship Company's line running to Alaska and San Francisco. The city is well built, many streets being paved with asphalt; it has good hotel accommodations and several parks, among which is Stanley Park, one of the most beautiful parks on the Pacific Coast. It has several important industries, such as iron works, sugar refinery, canneries, and large sawmills. Electric cars

A DRIVEWAY IN STANLEY PARK, VANCOUVER, B. C.

run on all the principal streets and connection is made with New Westminster, twelve miles distant. The buildings of this city, which has a population of 30,000, would do credit to those of one of much larger size. This is the natural headquarters of tourists for this region, on account of the beautiful scenery and the fishing and hunting attractions.

New Westminster is the oldest city of the entire province. It was founded during the gold excitement of 1858, is situated on the Fraser River sixteen miles above its mouth in the center of a rich farming country, and is connected with the Canadian Pacific by a branch from Westminster Junction, and, as before stated, an electric line from Vancouver. The city is built on a side hill overlooking the river and is very imposing. Five canneries are located within the limits, three large sawmills, an oatmeal mill, condensed milk factory, sash and door factory, machine shops, etc. The Provincial Penitentiary, Asylum for the Insane and other public buildings are located here. The Fraser River is navigable up to the Yale District. There are several other important towns in this district, and the Harrison Hot Springs, near the Canadian Pacific, have become a very noted health resort.

Vancouver Island and Comax.—Vancouver Island is separated from the mainland by the Strait of Georgia and from the United States mainly by the Strait of Juan de Fuca. The island is 300 miles long, with an average breadth of about fifty miles, and covers the local districts of Alberni, Nanaimo, Cowichan and Esquimalt, the north half of the island being in the Comax District, which includes a portion of the mainland opposite. The two ends of Vancouver Island are comparatively flat, but the mountains of the interior range from 6,000 to 8,000 feet in height and are covered with fir and cedar timber. The interior of the island is unsettled, the eastern portion only being suitable for agriculture. The island, however, is rich in mineral wealth—gold, copper and coal; the coal mines at Nanaimo mine annually 1,000,000 tons.

Esquimalt, a suburb of Victoria, is the principal harbor and has long been the rendezvous of the Pacific British squadron. It is connected with Victoria by an electric car line. The nucleus of the town is the government buildings, dry docks, etc.

Victoria is the capital of British Columbia and the chief city of Vancouver Island, having a population of 20,816. It was first settled as a trading post and a fort of the Hudson's

Bay Co. It is beautifully situated at the extreme southern end of Vancouver Island, opposite the Strait of Juan de Fuca and the entrance to Puget Sound, and faces the magnificent Olympic Mountains of Washington. The large parliament buildings, which catch the visitor's eye as he enters the harbor, are very striking and cost more than one million dollars. The city is quite wealthy, substantially built, and is very English. The points of interest are the parliament buildings, naval station, Beacon Hill Park—a tract of 300 acres—the Gorge, the golf links on Oak Bay, the Royal Jubilee Hospital, and Mount Tolmie. This city has large business and shipping interests and is one of the outfitting points for the Yukon territory. Its commercial interests extend all

LEGISLATIVE BUILDINGS, VICTORIA, B. C.

over the world, and one of the largest iron works on the Pacific Coast is located here. It has many hotels and a large floating population, since it is the first and last stopping place of all vessels coming in and going to sea.

Nanaimo is situated on the east coast of the island and has a population of 5,000. This is the center of the coal mining interests, where a large number of men find employment in the mines. It is connected with Victoria by the Esquimalt & Nanaimo Railway.

A great feature touching the relation of commerce to the province of British Columbia is that its commercial seats are nearest to all the important seaports of the world, east and west. The shortest lines around the world are in the latitude of southern British Columbia, and the shortest lines from Liv-

erpool to Hongkong are via Quebec, Winnipeg, Vancouver and Yokohama. The commerce of this province, in consequence, must be large. Its exports in 1902 reached over two million dollars, it having a lumber fleet of eighty vessels, to say nothing of the fleets carrying the general tonnage in transit.

There are large areas of free lands in this province, which can be obtained under the homestead laws by making allegiance to the British Crown. The settlers upon these lands have liberal exemptions from debt executions, and many other advantages not offered in the United States. Land, however, can be bought and held by an alien without becoming a British subject. Remarkable changes are occurring in British Columbia and western Canada from the constant invasion of American settlers, which neither political differences nor arbitrary tariffs are able to resist. This must have the effect of drawing these nations, whose interests are largely identical, still more closely together.

WESTERN CANADA.

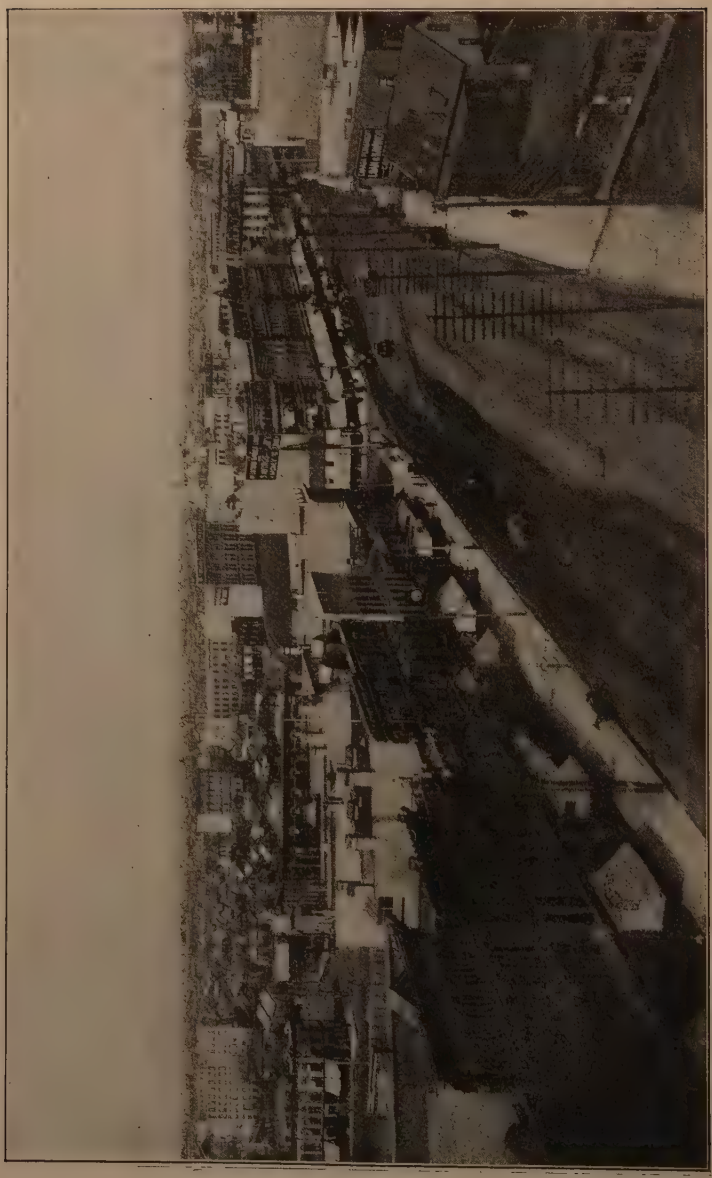
By Western Canada is meant the large agricultural country lying between the Rocky Mountains and Ontario, and north of Minnesota, North Dakota and Montana. It covers a distance of about 800 miles along the boundary and extends northward in some places almost indefinitely. The political divisions of this region are the Province of Manitoba and the territorial districts of Assiniboia, Saskatchewan, Alberta and Athabaska.

Manitoba has an area of 73,000 square miles. It has ample rainfall and about the same characteristics as the Red River Valley in Minnesota, of which its southern portion is a part. This province has in crops this year 2,000,000 acres, and in 1901 it raised more than 30,000,000 bushels of wheat. The yield is generally large and there is good profit, not only in this cereal, but also in cattle. Assiniboia has an area of about 99,000 square miles, about that of the state of Minnesota. Saskatchewan, lying to the north of Assiniboia and Manitoba, has an area of 106,000 square miles, about that of Michigan and Ohio combined. Alberta, which lies between the Rocky Mountains and these two last named districts, has an area of 106,000 square miles. Not including Athabaska, these other districts have 308,000 square miles, of which it is estimated

about seventy to seventy-five per cent is usable. This, of course, depends upon the character of the country and the rainfall. The general character of the land is a general vast rolling prairie of a rich, black soil, with a clay subsoil, which is particularly adapted to wheat. This subsoil, as in the States, retains the winter moisture to aid the growing plant to its maturity whether much rain falls or not during the ripening process. The climate is cold in winter and hot in summer; the spring is short and the fall delightful. The general average of rainfall is about seventeen inches; in northern Alberta, about fourteen inches, and at Regina about eight inches.

PARLIAMENT BUILDINGS, WINNIPEG, MANITOBA.

The western part of Assiniboia is perhaps the extreme western limit of the wheat raising section, without irrigation, along the line of the Canadian Pacific. The arid region is covered with bunch grass and makes good stock ranges. The country is well watered by streams draining mostly into Hudson Bay. Throughout the general region wheat is the main crop and will no doubt long remain so, for the conditions are not wholly conducive to diversified farming, besides which the yield of wheat has been so large and it requires so little labor to handle large tracts, that the farmer is inclined to plant largely this one crop. Cattle raising in the more arid districts



WINNIPEG, MANITOBA.

is very extensive. These lands, which could have been bought in 1900 for $3 per acre, are now bringing from $6 to $10 per acre in favored localities and are cheap at these prices. Lands still range from $3.50 to $5 per acre in the Calgary and North Alberta districts.

The country is very accessible by way of the Canadian Pacific and its branches, the Canadian Northern, the "Soo Line" and the Great Northern and Northern Pacific, the two latter roads giving direct communication between the "Twin Cities" and Winnipeg, where the Canadian lines may be taken for destinations. The Trans-Canada Railway, now building from Quebec, on the St. Lawrence, to Port Simpson, on the Pacific, will pass through Saskatchewan and Alberta or Athabaska, which will bring within a short haul to its line an immense area of land on a very direct line to the English market.

The general government of Canada is federal, and the provinces and districts have local legislatures. Regina, population 2,645, is the chief town of Assiniboia and the capital of the Northwest Territories, also the headquarters of the mounted police.

ALASKA.

The district of Alaska, the most northerly possession of the United States, lies between 51° and 71° north latitude and 130° and 175° west longitude. The main portion of Alaska, however, lies between 60° and 71° 30′ north latitude and 141° and 168° west longitude. The estimate made by the government officials gives Alaska an area of 590,884 square miles, which includes the Aleutian Islands and the narrow strip south of Mount St. Elias, known as southeastern Alaska, or the Panhandle. It has a remarkably long coast line on the Pacific Ocean, Bering Sea and the Arctic Ocean, estimated to be over 18,000 miles, including the islands. The compact part of Alaska is about 800 miles in length, east and west, and 1,100 miles north and south, while from Point Barrow, the extreme northerly point in the Arctic Ocean, to Portland Canal, the most southerly point, is 1,500 miles. The Alaska Peninsula and the chain of Aleutian Islands extend 1,500 miles into the Pacific Ocean. With the acquisition of the Philippine Islands and Alaska, the United States has acquired territory not only in the frigid but in the torrid zone, the territory of

Alaska alone constituting one-fifth of the area of the United States proper.

History.—In 1728 Vitus Bering, a Danish navigator in the employ of Russia, discovered the strait now bearing his name, and in June, 1741, sighted Mount St. Elias. Later some of the Aleutian Islands were visited, where Bering died. A vessel load of sealskins was taken to Kamschatka on the return voyage. This induced other Russians to search for seals, and in 1743-49 four voyages were made to the seal islands, and

PARADISE BAY AND MOUNT EMMA, ALASKA.

thus the Russian fur trade and interest in Alaska was established. In 1762 a trader by the name of Gottoff wintered on Kadiak Island. At this island the first permanent settlement was established by Shelikoff and the town named Three Saints. From this point various trading ports were established, one on Afognak Island and another at Cape St. Elias.

John Quadra, a Spaniard, visited the vicinity of Sitka in 1775, and Captain Cook, an Englishman, in 1778 entered the

inlet which bears his name. In 1790 Alexander Baranof was given charge of the Russian settlements by Shelikoff, and in 1799 the Russian American Fur Company was chartered and given twenty years' control of the entire country. During this year Baranof landed on the island now bearing his name and established Sitka, building a fort which he called Archangel, but in 1802 the natives killed most of the settlers and destroyed the place. In 1806 the settlement at Yakutat was also exterminated. In 1824 a treaty between the United States and Russia fixed the southern boundary at 54° 40′, and the waters of the North Pacific Ocean were opened to American ships. In the following year a treaty was made between Great Britain and Russia by which the boundary line between the then Russian possessions and British possessions was established as it remains to this date.

In 1867 the United States government, under the auspices of William H. Seward, then secretary of state, purchased Alaska from the Russian government, paying therefor, with all the rights and emoluments thereunto belonging, $7,200,000. Since that time the Russian treaty has been of much interest, and the important part, or description of the boundary line, is herewith quoted verbatim:

"Commencing from the southernmost point of the island called Prince of Wales island, which point lies in a parallel of 54 degrees 40 minutes north latitude, and between the 131st and 133d degrees of west longitude (meridian of Greenwich), the said line shall ascend to the north along the channel, called Portland channel, as far as the point of the continent where it strikes the 56th degree of north latitude; from this last mentioned point the line of demarkation shall follow the summit of the mountains parallel to the coast as far as the point of intersection of the 141st degree of west longitude (of the same meridian), and finally, from the said point of intersection, the said meridian line of the 141st degree, in its prolongation, as far as the frozen ocean.

"With reference to the line of demarkation, it is understood, first, that the Island called Prince of Wales island shall belong wholly to Russia.

"Second, that whenever the summit of the mountains, which extend in a direction parallel to the coast from the 56th degree of north latitude to the point of intersection to the 141st degree of west longitude, shall prove to be at the distance of more than ten marine leagues from the ocean, the limit between the British possessions and the line of coast which is to belong to Russia, as above mentioned, shall be formed by a line parallel to the winding of the coast, and which shall never exceed the distance of ten marine leagues therefrom."

The mountain ranges near the coast did not prove to be such as was expected when the treaty was made, hence by common consent the United States and Canadian governments adopted the ten-league limit, and until recent years no question arose. The discovery of gold in the Klondike region gave additional value to the coast strip, and Canada, desiring to hold the head of Lynn Canal, the nearest seaport to the gold regions, as an open port, insisted on interpreting the treaty of 1824 so that the measurement of the thirty-mile strip would begin along the outer edge of the fringe of islands. This was opposed by the United States, and in 1800 a provisional boundary line along the head of Lynn Canal was agreed upon, both countries reserving their claims for later settlement.

LOOKING DOWN YUKON RIVER BELOW DAWSON.

As early as 1868 the Yukon River had been traversed by a party who had built a raft near its head waters and floated from this point to the sea, a distance of more than 2,000 miles. In later years adventurous prospectors for gold had, in pairs or small parties, crossed the Chilkoot Pass by trail and reached the Yukon, taking out some placer gold at Forty Mile and a few other places, generally being satisfied with their expenses and a sufficient grub stake for the coming season. Sitka had been retained as a capital city by the United States, the appointed governor making it his headquarters, and Juneau had sprung up as a supply station, with the success of

TREADWELL MINE. LARGEST QUARTZ MILL IN THE WORLD.

the now famous Treadwell mine, on Douglas Island. The steamboats of the Alaska Commercial Co., the successor of the Russian company, were plying the Yukon, supplying the outposts for trading on the upper river with sealers and whalers in Bering Sea; codfishing was carried on along the banks, and lastly salmon canneries were being established.

It was in August, 1896, that George Carmack and his Indian partners took from the foot of the now famous Birch Tree, on Bonanza Creek, the first pan of gold from the Klondike. He staked a claim for himself and for each of his Indian friends, and at once hastened to Forty Mile for provisions, from whence the news was spread. The display of his "poke" of gold dust told the tale, and the Klondike boom was on. During this and the following months this creek and Eldorado Creek were staked, and in the spring of 1897 the richness of the district was known from Circle City to Sixty Mile, and every man, woman and child who could make the trip was soon journeying on the ice to the new diggings. The arrival of the steamer Portland at the Seattle dock in 1897 with the first treasure seemed to set the world on fire, and during that and the succeeding year the mad rush to Dyea and Skagway took place. Men toiled over the treacherous passes and many lives were sacrificed. An eye-witness says: "I saw on that steep precipice which leads to the Chilkoot Pass day after day a long line of men, pack laden, slowly making their way to the top. So thickly crowded was the trail that one near the bottom would stand for several minutes waiting for a place." That rush lasted all through the winter of 1897-98. The old route led to Sheep Camp, then to Lake Linderman, where timber was whipsawed for boats, and then, when the ice broke, the boats were launched, dangerous rapids were braved and after many days those of the adventurers who were lucky enough to escape the dangers arrived at the mouth of the Klondike, helping to swell the city of Dawson, then in its infancy. Dawson, in 1897, had a population of fully 5,000, and in 1898, with the surrounding country, it had probably 40,000. The overflow spread out in all directions, many of the people finally reaching Nome.

The building of the White Pass & Yukon Railway from Skagway to White Horse, via the White Pass, connecting with steamers on the Yukon, now makes the trip very enjoyable, either winter or summer, the time from Seattle to Daw-

son City being only seven days. Of late Dawson has become very quiet, as the days of the placers are fast passing away. The amount of gold taken from these remarkable placers to June 20, 1903, is in value $80,000,000, but is each year growing less. Now the lower river on the American side is being opened, discoveries are being made at various points, and a good wagon road has been built 150 miles into the interior from Valdez which will ultimately reach the Yukon.

The history of the discovery of gold on Seward Peninsular, at Council City, Ophir and Anvil Creek, now known as the

NOME, ALASKA.

Nome district, is here given in the words of Captain D. B. Libby, of San Francisco, the original discoverer:

"In 1866 I was in command of a construction party, stationed at Port Clarence, Alaska, engaged in building a telegraph line called the Western Union Russian Extension, starting from New Westminster, B. C., and intended to reach St. Petersburg, Russia, by Bering Strait. My division extended from Cape Prince of Wales to Norton Bay. Our station consisted of four well constructed buildings, and the party

of forty-one men. We landed in September, 1866, and built fifteen miles of line to the head of Grantley Harbor that fall and eight miles more in the spring of 1867, and put the same in operation. We published monthly a paper we called 'The Esquimaux' at the settlement we called Libbyville. Myself and two men, in the fall of 1866, went with dog teams over the proposed route to Norton Bay. When we reached the Neukluk River not much snow had fallen and some of the bars were bare, and I was convinced it was a gold country. I tried some of the dirt a little farther down and got some colors. I told the men with me that when we had completed our construction the next summer we would prospect more thoroughly.

"We had a hard winter, our provisions gave out, and after that we lived on native food until July, when a company vessel came in and we were informed the whole project had been abandoned. The laying of the first Atlantic cable was the cause. Returning to California, I thought not of Alaska until the Klondike strike was confirmed. In August, 1897, I formed a party of four men, outfitted for two years, and destined for Golovin Bay, where we landed September 17. After building winter quarters, in November we went up the Fish River, camped at the mouth of what is now called Ophir Creek and found fairly good prospects. One of the party and myself went up again with reindeer teams and were gone thirty-seven days, during which time we found gold in many places. In March, 1898, we all went up and camped in a deserted Esquimaux hut, where Council City stands. We located claims on Ophir and Melsing creeks and with some others, brought up from the mission, formed Discovery and Eldorado districts and named our camp Council City.

"In July, 1898, I sent Mr. Blake with a missionary up the Nome coast to prospect, which he did on what is now known as Anvil Creek, finding about forty colors to the pan, so the missionary said, but no locations were made. There was a misrepresentation of things, and the missionary and others returned to Nome and located the whole of Anvil Creek."

Since then great developments have taken place on these creeks, and the amounts taken out through placer mining alone and up to 1892 with very ordinary methods have astonished the world.

Along the coast of southeastern Alaska the land rises from

MUIR GLACIER AND BAY.

ICE PEAKS ON MUIR GLACIER.

the water very abruptly to altitudes of thousands of feet. The chain of islands is separated from the mainland by channels, and deep, narrow fiords extend far into the mainland, where they branch out into other and similar bays. From the commencement of American territory, at Dixon entrance to Glacier Bay there is presented to the traveler more natural wonders than any region of equal extent in the world. The entire coast in its gorges shows unmistakable evidence of glacial action; in some places the ice has only recently retreated, while in other places the glaciers are still at work. Lynn Canal, which is ninety miles long, is an excellent illustration of these glacial fiords, and Glacier Bay, with Muir Glacier, an illustration of the ice in action. This latter is one of the most massive glaciers on the coast, being one mile in width and from 250 to 300 feet in height. As it projects into the ocean the warmer water melts the base, and the upper portions, having lost their supports, fall off in the form of bergs, containing thousands of tons of ice. Between Yakutat Bay and Prince William Sound are many ice fields, one of the largest in this region being the Malaspina Glacier, which occupies the foot of Mount St. Elias. This glacier extends over an area of 1,500 square miles, and is the only glacier of North America which comes in direct contact with the open sea. Its remarkable feature is a forest, growing out of the accumulated dirt and stones which cover the ice field.

North of Cross Sound and southeast of Mount St. Elias is the important inlet of Yakutat Bay, a deep, funnel-shaped fiord, that penetrates first far northeastward and then southeastward, being a narrow body of water, bordered by lofty mountains. Between the Copper River and Kenai Peninsula lies Prince William Sound, the entrance to which is obstructed by mountainous islands that attain an elevation of 10,000 feet. Extending into the land about forty miles, the sound has numerous branches, at the heads of which are moving glaciers; the most northerly and easterly arm is known as Port Valdez, and at the head of this is located the town of Valdez. This place was first settled in 1898, and now has a population of about 500. It is the southern terminus of the government mail route to Eagle City, on the Yukon. Large deposits of copper have been discovered near here, and a railroad to the Tanana River is being considered. There is steamer connection with Alaskan and United States points. The Copper River is a

large stream, remarkable for its delta, above which it is navigable for about thirty miles.

On Kenai Peninsula coal fields have been discovered, and west of this peninsula lies Cook's Inlet, the largest and longest estuary in Alaska. Into this inlet empties the Shushitna River, through a large moorland delta, after having passed through several gorges, one of which is 4,000 feet deep. The scenic grandeur in this region is unsurpassed in Alaska. Lying west of the inlet is Lake Iliamna, eighty miles in length

BUSTER, A GENUINE ESQUIMAUX DOG.

and twenty-four in width, which empties its waters into Bristol Bay. It is joined with Lake Clark, another long and odd shaped lake, the two together making a distance of about 200 miles. Back of these lakes, and to the north, a fine stretch of agricultural country exists. Some good copper and gold fields have been discovered lately, the copper being near tidewater, and the gold at some distance in the interior. A good harbor exists at Iliamna, which is free from ice both winter and summer.

Kadiak Island lies at the mouth of this inlet, and the town

of Kadiak on its eastern side. Here is the largest outfitting place in southern Alaska. Ninety miles west, on the same island, Karluk is situated, where two-thirds of the salmon pack of Alaskan waters are put up. There is much agricultural land in this vicinity, and cattle graze the year round. The thermometer never records zero, and the snow lies upon the ground but a very short time. Two trading stores are located here. Unga is located on the island of the same name, 1,200 miles west of Juneau, and is the seat of several trading posts. Farther west the Unimak Pass, between the peninsula and Aleutian Islands, affords an entrance to Bering Sea. On the island Unalaska are located the ports of Unalaska and Dutch Harbor, 272 miles west of Unga. They are coaling stations for the steamers en route to St. Michael and Nome, and supply stations for whalers and sealers. These places are far out in the Aleutian Islands, this island lying farther west than Honolulu. The harbor is a magnificent one in every way, and the hills about it are rich in gold and silver. In the old Russian town is an old church, and the inhabitants, apparently an amalgamation of the Japanese, Indians, whites and Eskimos, speak the Russian language. On these islands the grass grows very luxuriantly. This island was settled in 1738 and is now the headquarters of the Alaska Commercial Co. and the North American Commercial Co., in Bering Sea, which companies have posts at all important points in Alaska, the latter holding the sealing privilege of the Pribilof Islands. At this point the great ice floes from the north begin to be seen. Some volcanic disturbances have taken place in Bering Sea of late years, one island having sunk from sight and another having been greatly enlarged. All of these islands are almost always enveloped in fog.

Bering Sea is quite shallow as compared with the Pacific Ocean. It is closed to navigation from November to June, inclusive. The first bay above the peninsula is Bristol Bay; Nushagok, on this bay, has a cannery and trading post. The next to the north is Kuskoquim Bay, which receives the Kuskoquim River, the second largest river in Alaska. This river rises at the base of Mount McKinley, far in the interior, and winds through the rugged Tordrillo Mountains, then passes through a wide gravel plain, 100 miles in width, where it becomes very sluggish, then it enters the Kuskoquim Mountains, a timbered range, then through a depressed country to its

mouth. At one point it flows within twenty miles of the Yukon River. It is navigable for 600 miles. At an early day the Russians established several posts along this river.

Norton Sound is a large sound and is quite shallow; into its southern part empties the great Yukon River, the largest river in Alaska, and, for that matter, one of the largest and most important rivers of the Pacific Coast. It is navigable for large steamers for a distance of 2,000 miles from its mouth, or to the Lewis and Pelly rivers, which form it, and these rivers can be ascended by smaller steamboats for several hundred miles farther. The deltas of this river are greater than

GREEK CHURCH, UNALASKA, ALASKA.

those of the Mississippi; it discharges more water and drains an area of over one million square miles.

Near Fort Yukon the river is less than one mile in width, but below that point it widens. Near Rampart it is confined by the mountains to a narrow and deep channel, through which it rushes with great force, and below which it expands again to a width of many miles.

Three lines of steamers ply the river from its mouth to Dawson City, receiving their freight and passengers at St. Michael, which is located 100 miles from the main Yukon and 120 miles from Nome. The town is located on the island of St. Michaels, which is the headquarters of the United States

army for Alaska, being the center of a large government reservation, which includes the mouth of the Yukon. Two hundred and ten miles southeast of St. Michael, on the Yukon River, is situated Androfski, the winter quarters of one of the steamer lines. At Nulato the Koyukuk River empties into the Yukon. Here is an ancient Russian port, established in 1838, which was burned by the Indians, and re-established in 1842, and is now a prominent trading post. Koyukuk is situated at the mouth of the Koyukuk River; Bettles, the largest town and trading port in that mining district, is 665 miles up the Koyukuk River from the Yukon. This is a very rich camp.

Situated at the mouth of the Tanana River is the port

BURRO PACK TRAIN, DYEA POINT.

of Weare, or Fort Gibbons. The Tanana is 700 miles long and has many tributaries. It drains the country lying between the Copper River and the Yukon, and will no doubt be the pathway of a good wagon road very soon, and some day of a railroad to the southern Alaskan coast. Gold has been found in the hills, but much of the country has never been seen by a white man. Rampart City is 975 miles from St. Michael and is the supply station for the Big Minook mining district, twenty-eight miles away. Fort Yukon is situated just within the Arctic circle. The large commercial companies have erected buildings, where they are often forced to land

freight temporarily on account of low water on the Yukon River. Circle City was once the most important town in northern Alaska. It came near being depopulated at the time of the Klondike rush, but now is rising again, owing to the richness of the nearby Birch Creek district. Eagle City is located 1,475 miles from St. Michael, contains two churches, two sawmills, United States custom house and district court; the Fort Egbert military post is located here and is the terminus of the government trail from Valdez to the Yukon. It has telegraphic communication with Dawson. Forty Mile is in Yukon territory, 1,542 miles from St. Michael. This town is the headquarters for the Canadian mounted police. Fort Cudahy is the headquarters of one of the large trading com-

RECREATION RANGE, ALASKA.

panies. This is the town which was supposed to be in United States territory until 1896, when the 141st parallel was located. It was built by Americans.

Kotzebue Sound is a very large bay north of Cape Prince of Wales and is a part of the Arctic Ocean. At the head of Good Hope Bay some very rich mining districts have been opened, and tin has been found in paying quantities.

The country north of the Yukon River is characterized generally by bold, rocky hills and broad, marshy plains, a large portion lying within the Arctic Circle and bearing near the coast a lofty range of mountains, trending east and west. The dominant features of the Aleutian division, or that south of

the Yukon, are precipitous mountains, deep valleys, dense forests on the mainland and treeless islands along the coast. Excepting the western coast and the valleys of the Yukon and tributaries, comparatively little is known of the interior of the country north of the Yukon. The mountain elevation does not exceed 6,000 feet.

The Aleutian division is traversed by a broad mountain system, a continuation of the coast range, with spurs extending northward and covering large areas lying between the Yukon River and the main range to the south. The main range continues through the peninsula and Aleutian Islands, which are merely the summits of the submerged mountain system. The islands contain many volcanoes, some extinct, others dormant but smoking. Among the latter are Mounts Iliamna, Redoubt, Augustine and Pavlof. An island recently formed is Bogslof, while Grewingk Island was raised in 1884. The highest peaks in Alaska are Mount Tilman, 13,300 feet; Sanford, 13,500 feet; Drum, 13,700 feet; Blackburn, 16,140 feet; Wrangell, 17,500 feet; St. Elias, 18,024 feet; and McKinley, 20,464 feet; the latter being the loftiest peak in North America. All of these are in the Aleutian division, south of the Yukon, and generally near the coast.

The climate of Alaska varies greatly in the different portions of the district. The temperatures along the coast of the Pacific Ocean and Bering Sea are nearly alike, but differ widely in the interior. At Sitka the mean annual temperature is 43°, which does not differ greatly from northern Illinois. The extremes are from —2° to 90°; although it does not become cool, neither does it become very warm. From Portland Canal to the Aleutian Islands, though not cold, it is generally damp, foggy and chilly. The amount of rainfall on the western coast is about 105 inches, which occurs mostly during the autumn and winter months. At Unalaska only forty-five days of clear and partially clear weather are had in a year, 271 being either rainy or snowy. The Japan current makes the climate comparatively mild.

The Bering Sea coast is entirely different in climate; the mean temperature at St. Michael for January is —2° and for August 54°, the extreme being from —55° to 75°. In the interior of Alaska it is relatively warm in the summer and cold in the winter. At Eagle, where the boundary line crosses the Yukon, the mercury reaches —60°, and there are from ten

to twenty-five inches of rainfall, with more sunshine in a month than on the coast in a year.

As far west as Cook's Inlet the coast is densely timbered up to the timber line, about 3,000 feet, mostly with a rather poor quality of spruce, but at the higher altitudes the hemlock takes its place. The spruce grows to a very large size and extends as far north as the Koyukuk River, and westward to the deltas of the Yukon. There are enormous areas of pine and fir in the interior of good quality, enough to last the United States for a period of fifty years after the Oregon and Puget Sound timber belt is exhausted. There is little or no timber on the islands.

METHOD OF TRAVELING IN THE YUKON TERRITORY DURING THE WINTER.

The cereals and hardier vegetables have been cultivated successfully for years at several missions. Berries grow luxuriantly, and flowering plants are found in the favored parts. Alaska cannot be considered strictly an agricultural country, as the climatic conditions are not the most favorable, but there are large tracts of land around Cook's Inlet and along the islands and coast of southeastern Alaska which can be cultivated to advantage. There are vast areas of prairie where cattle can graze and where the grass grows as high as a man's shoulders. Alaska's resource is essentially mining, and that

placer mining for gold. The estimated product of that metal for 1900 was $8,171,000; silver, $94,772,000 (coinage value); and for 1902, $10,000,000, all metals.

The coal formations of Alaska are extensive. Lignite predominates, but bituminous and semi-anthracite are found to some extent. The Yukon coal is of inferior quality. The Cape Lisburne field, 200 miles north of Nome, supplies that territory. Coal, as hereinbefore stated, has been found on Kenai Peninsula, where considerable expenditure has been made in exploration work. Other metals found are silver, quicksilver, platinum and copper. The copper deposits on Cook's Inlet and at Valdez appear to be extraordinary. Petroleum oil has been found not far from the shores of Cook's Inlet near Cape Douglas.

The fisheries rank second among the industrial enterprises. About all the streams southward from Bering Strait to Dixon's Entrance and the bay inlets, swarm with food fishes, chiefly cod, salmon, herring and halibut. The fishing banks cover 50,000 square miles and are much safer than the banks of Newfoundland. The estimated capital invested in the packing of salmon is $12,000,000. The salmon are virtually slaughtered, there being no closed season and no regulations. Kadiak Island is the center of the canning industry. The seal fisheries were once very profitable for the government and those engaged in that industry, but owing to vandalism, pelagiac sealing and the killing of females, the herd became very nearly extinct. The matter was settled by arbitration at Paris, and now both the United States and Great Britain have naval patrols, which are only partially effective. The seal product for 1902 on the islands was 22,304 fur seals, at contract price of $9.62½ per skin.

Between Kotzebue and Norton Sound lies what is known as Seward's Peninsula, a sort of rough, arrowhead point, making out to Bering Strait, the extreme point being known as Cape Prince of Wales. This point is only forty-two miles from Asiatic territory, and lying between is the island of Diomedes. This is the nearest approach of the continents on the globe, and it is advocated that at no distant date a continuous line of railway will join New York with the main cities of Europe by this route. In fact, this matter has been taken up seriously. The Siberian government has made three surveys to points along the strait, which indicates a desire to

meet a road of this character with its trans-Siberian line. Mount Bendeleben, located in the central portion of Seward Peninsula, is the loftiest peak in this territory. A marked line of mountains extend from near the Yukon most of the way to Cape Prince of Wales, with interrupting broken plains. In the western portion these take the name of Saw Tooth Mountains, from their sharply serrated outline. A high range of rocky hills ends in a bold promontory at Cape Nome, from which the district takes its name. This territory is now producing more gold than any other of like size in the United States. Following the discoveries heretofore mentioned, the beach diggings were found to be good and extended continuously for thirty miles. Anvil, Glacier, Dexter, Osbourne and

ON THE BEACH AT NOME.

other creeks were located, then Anvil City, and later Nome City, were established. This was the scene of a great stampede during 1898-99. There being no harbor, "surfing," or the unloading of vessels by lighters, was necessary. There were no houses or warehouses upon the naked beach, and the scene is said to have been bewildering in the mass of goods, machinery and every article pertaining to mining dumped in piles and unprotected from the sea waves. Many people lost their lives, and it was a scene of confusion until the city of tents became regulated and a large portion of the too numerous population sought the interior. It has now become the metropolis of the northern coast of Alaska. The fact has become established that the gold fields are extensive, fabu-

lously rich and seemingly inexhaustible. This has built up a city of fine buildings, with a good water system, the water being brought from mountain streams five miles away. It has electric lights and telephone service, and a narrow-gauge railway seven miles in length, known as "The Wild Goose," connects it with Anvil Creek. It has general stores, hotels, restaurants, saloons, three banks, three churches, three newspapers and schools.

The placer fields, at first supposed to be confined to a small area about Nome, are now widely spread, gold having been found from the Klondike region of the upper Yukon to the Arctic Ocean, including the Porcupine River and its tribu-

CRADLING ON THE BEACH AT NOME.

taries, and westerly to Seward Peninsula, including the Koyukuk region. On Kotzebue Sound are the Keewalik and Candle Creek regions, and there are other producing creeks on that sound. Gold has been found at many places westward along the peninsula, and on Norton Sound to the Fish River. Here the Omylik Galina silver mines have been open for a number of years and only require transportation to become producers. The Council district to the west is a rich region, Ophir and other creeks having produced one-third of the whole Nome output for 1902. On the Neukluk, which joins the Fish River, many placers are found through its en-

TOTEM POLE.

tire length and most of its tributaries. The whole region from Council City to Nome is more or less developed, the Ruby Creek, a tributary of the Casa De Paga, being very rich ground. Rich ground has also been found near Port Clarence. Millions have been taken out of Anvil and associate creeks, and large portions of the creek beds and the benches have not been worked. In fact, the latter seem to afford deep mining and are often richer than the creek beds. An important district is the Solomon River; its formation indicates that the divide between the Casa De Paga and the Solomon is the source of the same gold, and it is now believed to be a part of the same ancient channel as that above Nome.

The normal annual production of Alaska placers has been from $6,000,000 to $7,000,000 since 1897, including the first year's large shore production. The output for 1902 was approximately $9,000,000. All the gold until 1892 was taken out without hydraulic means. To-day large operations are going on at Ophir Creek by the Lane Syndicate, also on Snake River, these mines having produced a very large portion of the later gold. Of the Alaska product the Nome and neighboring districts produced more than one-half, the remainder coming from the Yukon and other regions. The ancient river beds, the cave specimens, the imbedded skeletons of mammoths and saurians, all go to show that Alaska was once in a tropical climate.

About thirty miles from Nome is located Port Safety, or Solomon. It is on a high sandbar at the mouth of Port Safety lagoon, which is about twenty-five miles long. It is shallow, but schooners and steamers of light draft often seek shelter here. The Solomon River empties into this lagoon. The Solomon and tributaries have been good gold payers, and lately rich quartz leads have been discovered and a mill has been erected. Council City is situated on a high bluff overlook-

ing the Fish River. There are many prosperous mercantile establishments here and some very good buildings. Light draft steamers reach it by the Fish River and a railroad connects it with Ophir Creek. There is a probability of its soon having rail connection with Nome.

There are few good harbors on Bering Sea, Port Clarence affording the best. On this is located Teller City, which came into prominence in 1900. The town is about seventy miles from Nome, is the principal supply station for the Blue Stone country and has a number of general stores, hotels, etc. Near here is the reindeer station established by the government in 1898. There are now between 6,000 to 7,000 head

JUNEAU, ALASKA.

of these domesticated animals herded about Port Clarence Bay. The original stock was imported from Siberia.

Point Barrow, the extreme northern point of Alaska, is merely a United States signal station, to aid the whalers cruising in the Arctic Ocean.

The Sitka division, in the southeast, is the best known section of the Alaska district. On the mainland are rocky mountains, paralleling the coast, but broken at times. These extend as far as Mount St. Elias. The islands which form the Alexander Archipelago extend westward for a distance of 100 miles. These islands afford a very beautiful and sheltered route for the steamers plying between Skagway and southern

SITKA, THE CAPITAL OF ALASKA.

The principal object of interest is the Greek Church, presided over by a native Indian Priest.

ports. Some of the islands are large and have a climate and soil which give good agricultural results. Along this route is an ever changing but never ending scene of grandeur, comprising green mountains, with snow-capped tops, beautiful fiords and romantic Indian villages.

Wrangel is located on Wrangel Island, 730 miles north of Seattle. This is one of the largest fur trading posts in southeastern Alaska, handling in one season 400 bearskins, 300 beaver, 200 land otter, 500 marten and 5,000 mink, besides other skins. The chief industry is the canning and salting of fish, there being eleven salmon canneries in the district. This town is the center for several tribes of Indians, who represent their different families by totem poles, or carved animals, birds and fishes erected upon poles in the town and at their burial places, which are of much interest to the traveling public. There is considerable life in this town, which has two

VIEW OF SKAGWAY FROM STEAMER CITY OF KINGSTON.

sawmills in addition to other industries. Wrangel is on the line of the Pacific Coast Steamship Company's summer Alaska excursions.

Sitka is situated on Baronof Island, 178 miles southwest of Juneau, and is the capital of Alaska. There is an old Greek church located here, three other churches, two sawmills, various other industries, one newspaper, and it is the seat of the governor of the District of Alaska. The population is about 1,500, and the town is reached by the different steamship lines.

Juneau is situated on Gastineau Channel, opposite Douglas Island, 900 miles from Seattle. It is very picturesquely seated at the foot of a high and precipitous mountain. It has electric lights, water works, two banks and various industries. It was formerly the supply station for all the upper country. The famous Treadwell mine is located on Douglas

STEAMER PASSING THROUGH FIVE FINGER RAPIDS.

SKAGWAY, ALASKA.

Island, and is perhaps, with one exception, the greatest gold mine in the United States.

Skagway is located at the head of Lynn Canal, 1,000 miles north of Seattle. It is the southern terminus of the White Pass & Yukon Railway, which runs daily trains to White Horse and intermediate points, connecting with Yukon River steamers in the summer and stages in the winter for Dawson City. Skagway has good schools, five churches, two banks, eight large hotels, wholesale houses, four newspapers, telephone service, etc.

Glacier Bay lies between Lynn Canal and the ocean and is the site of the great Muir Glacier, the most frequently visited of any of the Alaskan glaciers, since the excursion steamers make this point a part of their route, proceeding far into the bay among the ice floes, which makes the trip very interesting.

Game, along the south shores and far into the interior, such as the moose, deer, bear and all the smaller fur-bearing animals, abounds, but north of the Yukon River game is very scarce. Waterfowl is abundant everywhere during the summer or nesting season, and the pheasant and ptarmigan are found in the extreme north and west at all times of the year.

RED RIVER VALLEY OF THE NORTH.

One of nature's most generous gifts to man is that part of our country known as the Red River Valley of the North, and nowhere in this broad, fertile, agricultural area can any lands be found that will grow and mature crops indigenous to this latitude equal to the country between the Great Northern Railway and the Red River in Pembina County, North Dakota. The lands are gently rolling, with a natural drainage to the east, which, with little or no assistance, carries all surface water away, leaving a beautiful prairie which, when under cultivation, produces the No. 1 hard wheat known the world over for its superior qualities as breadstuff, and will make from fifteen to twenty-five more loaves per barrel than bread made from other flour, and sells in the markets of the world for from 40 to 60 cents per barrel more money than flour made from any other grain. The Northern Pacific Railway traverses these lands in eastern Pembina County, and the towns along its lines are without exception thrifty and prosperous. The town making greatest improvement and destined to be the greatest commercial point in that part of the country is the beautifully located little city of Joliette. This town has been pushed rapidly to the front by that energetic, reliable concern, having large monied and land interests at this point, with general office at St. Paul, Minn. We refer to Warner & Andrus, whose operations in the Red River Valley have brought to the attention of the people of the East and South the great opportunity of this section during the past five years, and have caused hundreds of good farmers to invest, settle upon, and open up this part of our country, which, in a very few years, will be worth many times the prices of to-day.

FARM LANDS IN THE RED RIVER VALLEY.

There never was a more advantageous opportunity for purchasing farm lands than at the present time, and especially is this true of that country lying in the Red River Valley of the North and the adjacent counties in North Dakota, Minnesota, and Wisconsin.

The Valley is from thirty to seventy miles wide and more than 300 miles long. The soil is very fertile, consisting of a rich, black loam, from a foot and a half to three feet deep, and is free from stones. Water is obtained in abundance at from ten to forty feet. The lands in the Valley will grow crops equal to those of any other part of the Northwest. A No. 1 hard wheat is produced here, which has a world-wide reputation as a bread-maker, and has given to this locality the significant title of "the bread basket of the world." All the towns in these counties are progressive and the surrounding farmers prosperous.

For a number of years wheat has been the principal crop of the Valley, but this has lately been supplemented with diversified farming, stock-raising and dairying, all of which have been successfully practiced, and the cultivation of corn is steadily increasing. Potatoes, oats, barley, flax, and onions also thrive, and the sheep-raising industry is acquiring a strong hold. Farming is easy in the Red River Valley on account of the level nature of the ground, and for the small farmer this is an ideal region. The climate is very healthy.

Choice farm lands in the Valley and adjacent counties may be obtained at low prices from the well-known firm of the Burchard-Hulburt Investment Co., 705 Manhattan Building, St. Paul, Minn. They own the lands under their control, so that agents' commissions may thus be saved by purchasing direct from the owners. The lands for sale by this firm are located in Marshall, Kittson, and Aitkin counties, Minnesota; Grand Forks, Walsh, La Moure, Logan, and Mercer counties, North Dakota; Washburn County, Wisconsin; in Southern Minnesota; and in Manitoba, near Winnipeg. Maps and special information in regard to these lands will be cheerfully furnished upon application.

ADDENDA.

The National Irrigation Law.

Appended is the full text of the national irrigation law, approved by President Roosevelt, June 17, 1902. We publish the law, owing to its great importance and the widespread interest manifested in it.

An Act Appropriating the receipts from the sale and disposal of public lands in certain States and Territories to the construction of irrigation works for the reclamation of arid lands.

AMPLE MEANS ARE PROVIDED

Be it enacted by the Senate and the House of Representatives of the United States of America in Congress assembled:

That all moneys received from the sale and disposal of public lands in Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington, and Wyoming, beginning with the fiscal year ending June thirtieth, nineteen hundred and one, including the surplus of fees and commissions in excess of allowances to registers and receivers, and excepting the five per centum of the proceeds of the sales of public lands in the above States set aside by law for educational and other purposes, shall be, and the same are hereby, reserved, set aside, and appropriated as a special fund in the Treasury to be known as the "reclamation fund," to be used in the examination and survey for and the construction and maintenance of irrigation works for the storage, diversion, and development of waters for the reclamation of arid and semi-arid lands in the said States and Territories, and for the payment of all other expenditures provided for in this Act:

Provided, That in case the receipts from the sale and disposal of public lands other than those realized from the sale and disposal of lands referred to in this section are insufficient to meet the requirements for the support of agricultural colleges in the several States and Territories, under the Act of August thirtieth, eighteen hundred and ninety, entitled "An Act to apply a portion of the proceeds of the public lands to the more complete endowment and support of the colleges for the benefit of agriculture and the mechanic arts, established under the provisions of an Act of Congress approved July second, eighteen hundred and sixty-two," the deficiency, if any, in the sum necessary for the support of the said colleges shall be provided for from any moneys in the Treasury not otherwise appropriated.

EXTENSIVE SURVEYS SHALL BE MADE

Section 2. That the Secretary of the Interior is hereby authorized and directed to make examinations and surveys for, and to locate and

construct, as herein provided, irrigation works for the storage, diversion, and development of waters, including artesian wells, and to report to Congress at the beginning of each regular session as to the results of such examinations and surveys, giving estimates of cost of all contemplated works, the quantity and location of the lands which can be irrigated therefrom, and all facts relative to the practicability of each irrigation project; also the cost of works in process of construction as well as of those which have been completed.

LANDS MAY BE RESERVED FOR IRRIGATION WORKS

Section 3. That the Secretary of the Interior shall, before giving the public notice provided for in section four of this Act, withdraw from public entry the lands required for any irrigation works contemplated under the provisions of this Act, and shall restore to public entry any of the lands so withdrawn when, in his judgment, such lands are not required for the purposes of this Act; and the Secretary of the Interior is hereby authorized, at or immediately prior to the time of beginning the surveys for any contemplated irrigation works, to withdraw from entry, except under the homestead laws, any public lands believed to be susceptible of irrigation from said works:

Provided, That all lands entered and entries made under the homestead laws within areas so withdrawn during such withdrawal shall be subject to all the provisions, limitations, charges, terms, and conditions of this Act; that said surveys shall be prosecuted diligently to completion, and upon the completion thereof, and of the necessary maps, plans, and estimates of cost, the Secretary of the Interior shall determine whether or not said project is practicable and advisable, and if determined to be impracticable or unadvisable he shall thereupon restore said lands to entry; that public lands which it is proposed to irrigate by means of any contemplated works shall be subject to entry only under the provisions of the homestead laws in tracts of not less than forty nor more than one hundred and sixty acres, and shall be subject to the limitations, charges, terms, and conditions herein provided:

Provided, That the commutation provisions of the homestead laws shall not apply to entries made under this Act.

IRRIGATION CONTRACTS ARE AUTHORIZED

Section 4. That upon the determination by the Secretary of the Interior that any irrigation project is practicable, he may cause to be let contracts for the construction of the same in such portions or sections as it may be practicable to construct and complete as parts of the whole project, providing the necessary funds for such portions or sections are available in the reclamation fund, and thereupon he shall give public notice of the lands irrigable under such project, and limit of area per entry, which limit shall represent the acreage which, in the opinion of the Secretary, may be reasonably required for the support of a family upon the lands in question; also of the charges which shall be made per acre upon the said entries, and upon lands in private ownership which may be irrigated by the waters of the said irrigation project, and the number of annual installments, not exceeding ten, in which such charges shall be paid and the time when

such payments shall commence. The said charges shall be determined with a view of returning to the reclamation fund the estimated cost of construction of the project, and shall be apportioned equitably:

Provided, That in all construction work eight hours shall constitute a day's work, and no Mongolian labor shall be employed thereon.

TERMS UPON WHICH LANDS WILL BE SOLD

Section 5. That the entryman upon lands to be irrigated by such works shall, in addition to compliance with the homestead laws, reclaim at least one-half of the total irrigable area of his entry for agricultural purposes, and before receiving patent for the lands covered by his entry shall pay to the Government the charges apportioned against such tract, as provided in section four. No right to the use of water for land in private ownership shall be sold for a tract exceeding one hundred and sixty acres to any one landowner, and no such sale shall be made to any landowner unless he be an actual bona fide resident on such land, or occupant thereof residing in the neighborhood of said land, and no such right shall permanently attach until all payments therefor are made. The annual installments shall be paid to the receiver of the local land office of the district in which the land is situated, and a failure to make any two payments when due shall render the entry subject to cancellation, with the forfeiture of all rights under this Act, as well as of any moneys already paid thereon. All moneys received from the above sources shall be paid into the reclamation fund. Registers and receivers shall be allowed the usual commissions on all moneys paid for lands entered under this Act.

RESERVOIRS AND IRRIGATION WORKS

Section 6. That the Secretary of the Interior is hereby authorized and directed to use the reclamation fund for the operation and maintenance of all reservoirs and irrigation works constructed under the provisions of this Act:

Provided, That when the payments required by this Act are made for the major portion of the lands irrigated from the waters of any of the works herein provided for, then the management and operation of such irrigation works shall pass to the owners of the lands irrigated thereby, to be maintained at their expense under such form of organization and under such rules and regulations as may be acceptable to the Secretary of the Interior:

Provided, That the title to and the management and operation of the reservoirs and the works necessary for their protection and operation shall remain in the Government until otherwise provided by Congress.

NEEDFUL PROPERTY MAY BE ACQUIRED

Section 7. That where in carrying out the provisions of this Act it becomes necessary to acquire any rights or property, the Secretary of the Interior is hereby authorized to acquire the same for the United States by purchase or by condemnation under judicial process, and to pay from the reclamation fund the sums which may be needed for that purpose, and it shall be the duty of the Attorney-General of the United States upon every application of the Secretary of the Interior, under this Act, to cause proceedings to be commenced for

condemnation within thirty days from the receipt of the application at the Department of Justice.

STATE INTERESTS SHALL BE RESPECTED

Section 8. That nothing in this Act shall be construed as affecting or intending to affect or to in any way interfere with the laws of any State or Territory relating to the control, appropriation, use, or distribution of water used in irrigation, or any vested right acquired thereunder, and the Secretary of the Interior, in carrying out the provisions of this Act, shall proceed in conformity with such laws, and nothing herein shall in any way affect any right of any State or of the Federal Government or of any landowner, appropriator, or user of water in, to, or from any interstate stream or the waters thereof:

Provided, That the right to the use of the water acquired under the provisions of this Act shall be appurtenant to the land irrigated, and beneficial use shall be the basis, the measure, and the limit of the right.

ALL REGIONS SHALL BE TREATED FAIRLY

Section 9. That it is hereby declared to be the duty of the Secretary of the Interior in carrying out the provisions of this Act, so far as the same may be practicable and subject to the existence of feasible irrigation projects to expend the major portion of the funds arising from the sale of public lands within each State and Territory hereinbefore named for the benefit of arid and semi-arid lands within the limits of such State or Territory:

Provided, That the Secretary may temporarily use such portion of said funds for the benefit of arid or semi-arid lands in any particular State or Territory hereinbefore named as he may deem advisable, but when so used the excess shall be restored to the fund as soon as practicable, to the end that ultimately, and in any event, within each ten-year period after the passage of this Act, the expenditures for the benefit of the said States and Territories shall be equalized according to the proportions and subject to the conditions as to practicability and feasibility aforesaid.

How Lands May Be Had in the Great Northwest.

There are several ways in which the intending settler may obtain lands:

By locating on public lands in the districts mentioned where irrigation is not necessary.

By locating on public lands that require irrigation, but so located that a water appropriation may be made and water diverted without incurring too great an investment.

By locating and acquiring title to lands that will be irrigated under the state arid land commission act.

By leasing or purchasing lands that are embraced in private canal systems.

By purchasing improved lands carrying water rights.

A homestead may be secured by any person who is the head of a family, or has arrived at the age of twenty-one years, and is a citizen

of the United States, or has filed his declaration of intention to become such, and who is not the proprietor of more than 160 acres of land in any state or territory; he is entitled to one-quarter section (160 acres), or less quantity of unappropriated public land, under the homestead laws. The applicant must make affidavit that he is entitled to the privileges of the homestead act, and that the entry is made for his exclusive use and benefit, and for actual settlement and cultivation, and must pay the legal fee and that part of the commission required, as follows: Fee for 160 acres, $10; commission, $4 to $12; fee for eighty acres, $5; commission, $2 to $6. Within six months from date of the entry the settler must take up his residence upon the land, and reside thereupon and cultivate the same for five years continuously. At the expiration of this period, or within two years thereafter, proof of residence and cultivation must be established by four witnesses. The proof of settlement with the certificate of the register of the land office is forwarded to the general land office at Washington, from which patent is issued. Final proof cannot be made until the expiration of five years. The government recognizes no sale of a homestead claim. After the expiration of fourteen months from the date of entry the law allows the homesteader to secure title to the tract, if so desired, by paying for it in cash and making proof of settlement, residence and cultivation for that period. The law allows only one homestead privilege to any one person, but under act of March 2, 1889, section two provides in certain cases, when the first homestead was necessarily abandoned, that a second homestead may be made.

An unmarried woman, of age, can take the benefit of the homestead law. If she marries before she has acquired the title, and continues her residence on her claim, she can proceed to prove up at the proper time, the same as if she had remained single, but husband and wife cannot secure separate tracts by maintaining separate residences at the same time. All the sons and daughters of a family, who are of age, are entitled to take up land under the United States laws.

A soldier who has served in the army or navy during the War of the Rebellion for over ninety days can obtain 160 acres of any public lands by filing (himself or by an attorney) a declaratory statement and within six months thereafter filing his affidavit and application, commencing settlement and cultivation, and continuing the same for five years, less the time he served in the army or navy, but such time in no case to exceed four years. His widow can take advantage of the above. In case of his death in the army, or discharge therefrom on account of wounds or disability incurred in the line of duty, the term of his enlistment is deducted. In case of the death of the soldier, his widow, if unmarried, or in case of her death or marriage, then his minor orphan children, by a guardian duly appointed and officially credited at the Department of the Interior, shall be entitled to all the benefits given to soldiers under the homestead laws.

Under the desert land act, any citizen of the United States, or persons who have declared their intention to become such, and who are also residents of the state or territory in which the land sought is situated, may file a declaration under oath with the register and receiver of the land district in which any desert land is situated, that he intends

to reclaim a tract of desert land, not exceeding 320 acres, by conducting water upon the same, within four years. At the time of filing this declaration a fee of twenty-five cents for each acre of land proposed to be so reclaimed must be paid.

At the time of making the declaration the land taken up under this act must be particularly described, if surveyed, or, if unsurveyed, must be described as nearly as possible. The party shall also file a map of said land, which shall exhibit a plan showing the mode of contemplated irrigation, and which plan shall be sufficient to thoroughly irrigate and reclaim said land and prepare it to raise ordinary agricultural crops, and shall also show the source of the water to be used for irrigation and reclamation. At any time within four years, upon making satisfactory proof to the register and receiver of the reclamation of said land, and the expenditure thereon for improvements of $1 an acre each for three years, and proof of the cultivation of one-eighth of the land, and upon the payment of the additional sum of $1 per acre, a patent shall be issued. A claimant must also file with the register during each of said three years proof by the affidavits of two or more credible witnesses that he has made such expenditure. He may, however, prove up earlier whenever he can make the required proof of reclamation, cultivation and expenditure to the aggregate of $3 per acre. All lands, exclusive of timber and mineral lands, which will not, without irrigation, produce some agricultural crop, are deemed desert lands. Residence on the land is not required.

Under the timber and stone act, any citizen of the United States, or one who has declared his intention to become such, can acquire not to exceed 160 acres; land must be chiefly valuable for timber or stone, containing no valuable deposits of gold, silver, copper, coal or cinnabar. Applicant is required to file sworn statement with register and receiver that he has made no prior application; to designate the tract required by legal subdivisions, setting forth its character as above, and that it is for applicant's own use and benefit. Such application will be published sixty (60) days when the applicant files further proof of the character of the land, paying $2.50 an acre therefor. Married women can purchase in Montana.

The homestead affidavits can be made before the clerk of the district court at any county seat, or before any United States commissioner in the state, and the journey to the land office be saved.

The Carey Act.

The commission of the state consists of five members, appointed by the governor, all residents and citizens of the state. Each member is under a bond of $5,000, the secretary being bonded for $20,000. The commission has an engineer, who does all work appertaining to his position.

In reclaiming arid lands granted by the general government to the state the commission is limited to an expenditure of $12.50 per acre. The commission is empowered:

1. To select lands and make surveys of water systems necessary for such reclamation.

2. To make contracts for the construction of water systems and to cause the lands to be settled.

3. To issue thirty-year six per cent bonds to meet the cost of reclamation and settlement of the lands, these bonds being a lien on the land, water rights, water system and appurtenances of the particular district for which they are issued.

4. To issue thirty-year six per cent bonds to develop water power plants and water supply for domestic use, for the redemption of which bonds a sinking fund is provided. These bonds are a lien on the water system and appurtenances, and all bonds can be foreclosed as in the case of mortgages for non-payment of principal and interest on maturity of the bonds.

5. To sell such bonds at par for cash and pay cash for construction, or to pay bonds in lieu of cash.

IN ADDITION, THE COMMISSION

1. Exercises full and immediate control over all construction and requires suitable indemnity from the contractor in the form of a bond from some responsible surety company.

2. Retains fifteen per cent of the entire cost of construction of water systems and settlement of lands until both are fully accomplished.

3. Operates and maintains perpetually the water system, charging the entire cost of such maintenance and operation equally against all acreage in the district.

4. Sells all lands and water rights, collects all moneys, and places them in the state treasury.

In case the interest on the bonds is not paid when due for want of funds, interest coupons may be registered in the office of the state treasurer, the registered coupons to draw six per cent interest per annum.

If, after providing for the redemption of coupons next due, there is a surplus in the state treasury, the commission may require the state treasurer to invest such moneys in state, county or school district bonds, or it may cause such moneys to be placed in trust for the benefit of the bondholders.

No land reclaimed under the provisions of this act may be sold to any except actual settlers, nor may the commission sell more than 160 acres to any one settler.

The maintenance rate for the use of water fixed by the commission "shall not exceed the actual cost of maintaining and operating said system in an economical manner and the cost of necessary improvements." Thus the settler gets water at actual cost. There is no direct profit to the state, which relies for its profit in the increased number of citizens and the increased production of wealth.

Inasmuch as the commission may pay bonds instead of cash for construction of water systems and canals, a settler may buy land with bonds.

The commission has established certain rules for the sales of lands and the use of water. The rules regarding the sale of land are as follows:

1. Application. Any person desiring to settle upon and purchase lands shall file his application for the same on the form established by the commission, stating therein the lands desired to be purchased and

the proposed method and terms of payment (which shall conform to the terms hereinafter set forth) and his intention to settle on said lands within.....days from the date of the application.

2. Settlement and Payments. Applicants shall settle upon the lands selected and make the first payment required and deliver the notes for deferred payments within .....days from the date of the application, whereupon they shall be entitled to a certificate of selection.

3. Deposit. At the time of the application the applicant shall deposit with the commission in cash or district bonds at least five per cent of the total purchase price as earnest money, to be applied on the first payment when the certificate of selection is issued; but in case of failure to make the first payment when due, said deposit shall be forfeited.

4. Payment in Bonds. Bonds of the district at par and accrued interest shall at all times be receivable in payment for lands, either for the whole purchase price or any part thereof or for any deferred payment of principal or interest.

5. Terms of Sale. The terms of sale shall be one-tenth cash on the issue of the certificate, with interest at six per cent per annum from the date of the application, and the balance in nine equal annual payments bearing six per cent interest per annum, payable semi-annually.

6. Interest Added. To the first cash payment shall be added six per cent interest on the total purchase price as assessed by the commission, from the date of the first bond issued for the reclamation of the land in the district to the date of the application. (First bond issued January 1, 1901, on District No. 4, Dearborn Canal.)

7. Purchaser's Option of Larger Payments. The purchaser may pay the whole, or any part greater than one-tenth, at the time of the issue of the certificate of selection, either in district bonds at par and accrued interest, or in cash, if desired.

8. Varied Deferred Payments. Deferred payments may be made in less than nine equal annual payments, provided, however, such payments shall be in equal annual amounts, the first one due one year after the date of the application.

9. Payments Before Maturity. Any deferred payment may be made before its maturity on any interest payment day, providing the last maturing payment shall be made before a payment maturing earlier can be made.

10. Coupon Notes. All deferred payments shall be represented by coupon notes in the form established by the commission, signed by the applicant and bearing the date of the application. Such notes and coupons shall bear interest at ten per cent after their maturity.

11. Varied Payment Days. If desired by the purchaser, the commission may arrange the date of the first payment to fall at a more convenient time to the purchaser than one year from the date of application, but in no event at a greater period than one year and three months from the date of the application, the balance of the deferred payments to be paid annually after the date of the first payment so fixed—interest payments to be arranged semi-annually to correspond.

12. Forfeiture on Default. In case of default in any payment of deferred principal or interest on any note at the maturity of either, such default continuing for six months, the lands and all payments made prior to such default shall be forfeited to the state, but the commission

may, notwithstanding such default, upon good cause shown at any time before the next recurring annual payment, reinstate the contract and extend the time of payment of all arrearages, but in no event beyond the next recurring annual payment.

13. Sale of forfeited Lands. Forfeited lands shall be offered again for settlement and sale at such prices and on such terms as may from time to time be established by the commission, provided, however, the price shall not be less than the balance remaining unpaid on the first sale of the lands, with interest and costs added.

The rules in regard to the use of water are as follows:

1. Superintendent. The commission shall appoint a district superintendent for each district, to hold office at the pleasure of the commission, and the commission shall fix his compensation and duties.

2. Duties of Superintendent. The district superintendent, under the orders of the commission, shall have entire charge of the canal system and the distribution and use of water, subject to such regulations as may be from time to time established by the commission.

3. Flow and Waste. The flow of water shall be regulated according to crop requirements, and waste of water will not be permitted in any instance.

4. Settler's Rights. Every settler shall be entitled to a sufficient flow of water, in the proper seasons, to irrigate all crops on his lands; such flow and use of water to be at all times subject to the rules and regulations of the commission.

5. Expenses. All expenses incurred in the administration, maintenance and repair of the canal system shall be charged according to law, and the commission shall annually assess the amount against the settlers as provided by law.

6. Laterals and Gates. All laterals and gates must be built according to surveys and plans furnished by engineer of the district. Such laterals and gates shall be paid for by the user, and shall be the property of and subject to the use of the state.

7. Trespass. No trespass will be permitted upon any canal, lateral, gate or right of way, or any property of the state in the district.

8. Policy of Home Rule. The Commission shall from time to time establish such further rules and regulations as it may deem for the best interests of the district, and hereby declares it to be the policy of the Commission after the completion and settlement of any district, to leave the administration and maintenance thereof in the hands of the settlers, as far as may be practicable and permissible by law.

It will be seen from the foregoing rules and regulations that one wishing to buy a farm can get one from the northwestern states on as favorable terms as he can buy anywhere in the country; and having bought it he is surer of being able to make the annual payments than on any unirrigated farm in the world, because on an irrigated farm he is sure of his crop, and does not have to figure on losing twenty-five to fifty per cent of a crop every three or five years.

Government Land Offices.

The operation of the United States land laws is simple, and persons desiring further information in regard to government lands may apply to or address "Register United States Land Office," at the following places:

Minnesota.	No. Dakota.	Montana.	Washington.	Oregon.
St. Cloud.	Fargo.	Miles City.	Olympia.	Oregon City.
Marshall.	Grand Forks.	Lewistown.	Vancouver.	Roseburg.
Crookston.	Devil's Lake.	Bozeman.	Seattle.	La Grande.
Duluth.	Bismarck.	Helena.	Walla Walla.	Lake View.
		Missoula.	Spokane.	The Dalles.
		Kalispell.	North Yakima.	Burns.
	Lewiston, Idaho.		Waterville.	
	Cœur d'Alene, Idaho.			

The Department of United States Geological Survey in 1903 decided upon and the Secretary of the Interior approved, of five irrigation districts to be developed under the June, 1902, arid reservation act. These projects are at Sweetwater Dam, Wyo., Gunnison Tunnel, Colo., Truckee and Carson Rivers, Nev., Milk River and St. Mary's Lakes, Mont., and Tonto Creek, Ariz. The estimate of the cost of these reservoirs and canals is $7,500,000, or an average of $7.50 per acre, but since about sixty per cent of the area covered will be worth irrigating the cost per acre of the land actually watered will be about $12.50 per acre. This is to be paid in ten equal installments the same as the land coming under the Carey Act.

Much land will be made available to settlement which no doubt will be taken up very fast as soon as the plans are fully made known.

Commercial Organizations.

For Special Information Regarding Lands and Business Opportunities, Address the Following Commercial Organizations:

MINNESOTA.

City.	County.	Name.	Officer.
Crookston,	Polk.	Commercial Union,	Martin O'Brien, Sec.
Thief River Falls,	Redlake.	Commercial Club,	Wm. C. Smiley, Sec.

NORTH DAKOTA.

Bottineau,	Bottineau.	Commercial Club,	W. R. McIntosh, Sec.
Devil's Lake,	Ramsey.	Devil's Lake Club,	J. F. Henry, Sec.
Dickinson,	Stark.	Library Association and Commercial Club.	
Fargo,	Cass.	Commercial Club.	Evan S. Tyler, Sec.
Grafton,	Walsh.	Business Men's Club,	H. L. Haussman, Sec.
Grand Forks,	Grand Forks.	No organization.	Address G. B. Clifford.
Jamestown,	Stutsman.	Business Men's Ass'n,	E. J. Gleason, Sec.
Lakota,	Nelson.	Board of Trade.	S. M. Poole, Sec.
Valley City,	Barnes.	Business Men's Union,	A. P. Peake, Sec.
Washburn,	McLean.	Commercial Club,	T. J. Haugebery, Sec.

MONTANA.

City.	County.	Name.	Officer.
Anaconda,	Deer Lodge.	No organization.	Address W. A. Bower.
Bigtimber,	Sweet Grass.	Business Men's Club,	J. E. Sheridan, Sec.
Billings,	Yellowstone.	Commercial Club,	P. B. Moss.
Bozeman,	Gallatin.	The Gallatin Club,	L. Vanderhook, Sec.
Butte,	Silver Bow,	Business Men's Ass'n,	J. T. O'Brien, Sec.
Forsythe,	Rosebud,	Building & Loan Ass'n,	E. F. Mayerhoff, Sec.
Fort Benton,	Choteau,	Board of Trade,	D. G. Browne, Sec.
Great Falls,	Cascade.	Board of Trade,	Vincent Fortune, Sec.
Helena,	Lewis and Clark.	Business Men's Ass'n,	C. H. Boynton, Sec.
Kalispell,	Flathead.	Board of Trade,	Jas. Conlon, Pres.
Miles City,	Custer.	Miles City Club,	M. G. Peek, Sec.
Missoula,	Missoula.	Business Men's Ass'n,	J. W. Kieth, Pres.
White Sul. Spgs,	Meagher.	Board of Trade,	B. W. Badger, Sec.

WASHINGTON.

Aberdeen,	Chehalis.	Merchants' Ass'n,	P. S. Locke, Pres.
Ballard,	King.	Board of Trade,	E. B. Cox, Sec.
Chehalis,	Lewis.	Citizens' Club,	W. A. Westover, Sec.
Clarkeston,	Asotin.	Business Men's Ass'n,	E. H. Libby, Sec.
Colfax,	Whatcom.	Chamber of Commerce,	G. H. Lennox, Sec.
Davenport,	Lincoln.	Board of Trade,	A. W. Turner, Pres.
Ellensburg,	Kittitas.	Commercial Club,	P. A. Getz, Sec.
Everett,	Snohomish.	Chamber of Commerce,	Walt. Thornton, Sec.
Fairhaven,	Whatcom.	Commercial Club,	R. G. Gamwell, Sec.
Goldendale,	Klickitat.	Board of Trade,	A. J. Ahala, Sec.
Kalama,	Cowlitz.	Board of Trade,	J. P. Atkin, Sec.
Olympia,	Thurston.	Chamber of Commerce,	Fred Schomber, Sec.
Port Angeles,	Clallam.	Commercial Club,	Horace White, Sec.
Port Townsend,	Jefferson.	Chamber of Commerce,	N. S. Snyder, Sec.
Ritzville,	Adams.	No organization.	Address Jul. Liemer.
Seattle,	King.	Chamber of Commerce,	J. B. Meikle, Sec.
South Bend,	Pacific.	Commercial Club,	M. D. Egbert, Sec.
Spokane,	Spokane.	Chamber of Commerce,	L. G. Monroe, Sec.
Tacoma,	Pierce.	Chamber of Commerce,	J. S. Whitehouse, Sec.
Vancouver,	Clark.	Commercial Club,	H. W. Arnold, Sec.
Walla Walla,	Walla Walla.	Commercial Club,	T. A. Paul, Sec.
Waterville,	Douglas.	Washington Land Co.,	C. T. Hansen.
Wenatchee,	Chelan.	No organization.	Add. Arthur Gunn.
Whatcom,	Whatcom.	Commercial Club,	S. B. Irish, Sec.
N. Yakima,	Yakima.	Commercial Club,	Fred Chandler, Sec.

IDAHO.

Boise,	Ada.	Chamber of Commerce,	W. E. Pierce, Sec.
Bonners Ferry,	Kootenai.	Business Men's Ass'n,	C. O'Callaghan, Sec.
Idaho Falls,	Bingham.	Business Men's Ass'n,	A. G. Changnon, Sec.
Lewiston,	Nez Perces.	Commercial Club,	V.W. Hasbrouck, Sec.
Moscow,	Latah.	Commercial Club,	H. Witherspoon, Sec.
Pocatello,	Bannock.	Chamber of Commerce,	Alex. Hyslop, Sec.
Shoshone,	Lincoln.	No organization.	Add. Bert Perrine.
Weiser,	Washington.	Commercial Club,	O. M. Harvey, Sec.

OREGON.

Albany,	Linn.	Alco Club,	Fred Dawson, Sec.
Ashland,	Jackson.	Board of Trade,	S. M. Calkins, Sec.
Astoria,	Clatsop.	Chamber of Commerce,	C. R. Higgins, Sec.
Baker City,	Baker.	Citizen's League,	N. C. Haskell, Sec.
Corvallis,	Benton.	Citizen's League,	E. E. Wilson, Sec.
Dallas,	Polk.	Board of Trade,	J. C. Hayter, Sec.
Eugene,	Lane.	Commercial Club,	F. McAlister, Sec.
Grants Pass,	Josephine.	Board of Trade,	Fred Mansch, Sec.
Heppner,	Morrow.	Commercial Club,	F. Gilliam, Pres.
Hillsboro,	Washington.	Board of Trade,	F. M. Heidel, Sec.
Hood River,	Wasco.	Hassola Com. Club,	D. McDonald, Sec.
Independence,	Polk.	Board of Trade,	R. E. Gray, Sec.
La Grande,	Union.	Commercial Club,	R. L. Lincoln, Sec.
McMinnville,	Yamhill.	Board of Trade,	H. S. Maloney, Sec.

City.	County.	Name.	Officer.
Medford,	Jackson.	Board of Trade,	J. W. Lawton, Sec.
Oregon City,	Clackamas.	Board of Trade,	J. W. Loder, Sec.
Pendleton,	Umatilla.	Commercial Ass'n,	J. F. Robinson, Sec.
Portland,	Multnomah.	Chamber of Commerce,	Samuel Connell, Sec.
Roseburg,	Douglas.	Board of Trade,	Ray McClellan, Sec.
Salem,	Dallas.	G. Salem Com. Club,	N. H. Judah, Sec.
Silverton,	Marion.	Board of Trade,	P. L. Brown, Sec.
The Dalles,	Wasco.	Com. & Athletic Club,	L. E. Crowe, Sec.
Vale,	Malheur.	Commercial Club,	John Boswell, Sec.
		BRITISH COLUMBIA.	
Vancouver,	New Westminster.	Tourist Association,	Fred Buscomb, Pres.
Victoria,	Esquimalt.	Tourist Association,	A. B. Frazer, Treas.

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All railroad companies sell round-trip tickets returning via Vancouver and the Canadian Pacific Railway, at the same rate as by any other line. Ask your railroad agent about it.

For further information write the Secretary of the

VANCOUVER TOURIST ASSOCIATION,
VANCOUVER, BRITISH COLUMBIA.

Geographically, no city is better situated to become a commercial metropolis; topographically, it is doubtful whether any other city in the world has more beautiful surroundings in its immediate neighborhood.

Its harbor is one of the grandest, it and the adjacent waters presenting the broadest scope for the votaries of the rod and gun, and for boating, yachting, and sea-bathing.

The climate of Vancouver and its neighborhood is milder than that of Southern England—there is virtually no winter here.

Within ten miles of the business streets of the city the mountaineer can indulge in the exhilarating pastime of mountain-climbing, rivaling that of Switzerland.

The city itself, with its well-paved streets, its splendid schools, churches, public and commercial buildings, its palatial homes, nest-

A TREE IN STANLEY PARK, VANCOUVER, B. C.

ling in a riotous profusion of flowers, evergreens, and ivy, offers many attractions that are peculiarly its own.

It rejoices in an ideal summer—malaria, black flies, and mosquitos being unknown. The evenings are always cool and the air pure, refreshing, and bracing.

Vancouver is the natural headquarters for tourists in British Columbia, and offers the following additional attractions:

The salmon-fishing industry of the mighty Fraser, in which an average of between six and ten million salmon are canned annually, is at our very doors—an industry that has not its counterpart in either hemisphere.

Stanley Park (one of the largest and most beautiful natural parks in the world), sea-bathing at English Bay, mountain-climbing. grand canyons of the Capilano, boating, yachting, shooting, fishing, hunting of big game, etc.

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BRITISH COLUMBIA

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THE CALIFORNIA OF CANADA

The city which is growing faster than any other in Canada; its population is now 35,000 — sixteen years old — what will it be in another ten? The only city on the Continent showing the same growth of population and commerce where there is no real estate excitement. We now have the Canadian Pacific Railway; before the year is out we shall have the Great Northern, and this year also the Yukon & Northern and Coast-Kootenay railways commence building. This is not one of the cities "destined to be," but

THE CITY OF THE PRESENT

We make a specialty of dealing in large business blocks returning steady rentals; in large loans on business property in the center of the city, and in selected farms, dairy and fruit lands within fifty miles of Vancouver. Brick and stone business blocks can be bought to return 6 to 7 per cent, and a gilt-edged mortgage to return 5 per cent. Both investments are absolutely safe, and the former will show steadily increased returns as the city grows. Rents are lower than in any other town of equal size on the Pacific Coast; there is lots of room for them to grow and still not be too high.

The following publications will be sent free — Latest "Board of Trade Report," "Vancouver Tourist Association" pamphlet, "List of brick and stone business buildings for sale," giving particulars of rentals, etc.; "Farm Lands in British Columbia," published by the

SETTLERS' ASSOCIATION OF B. C.

for which we are the only accredited agents.

HOPE, GRAVELEY & CO.

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200 Farms, wild and improved, in the Red River Valley of Minnesota; one-third Cash, Balance in ten years at 4 per cent. These lands are all our own lands and can be delivered at once with perfect title. **We are Land Owners Not Agents.**

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Other Lands	25,000 acres	in Southern Minn., near Marshall.
	20,000 "	" Washburn Co., Wis. (cut over).
	30,000 "	" Aitkin County, Minn. (timber).
	25,000 "	" La Moure County, N. D.
	15,000 "	" Logan County, N. D.
	20,000 "	" Mercer County, N. D.

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The Metropolis *of* Eastern Montana.

On the main line of the Northern Pacific, and terminus of the Burlington & Missouri River Railroad in Montana.

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Sixty miles from the vast Coal Fields of Red Lodge, Bear Creek, Gebo, and Bridger.

Finest Climate, Finest Soil, Finest Water, *and* Best Farms in Montana.

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The largest primary wool market in the world; shipped 14,000,000 pounds in 1901.

Ships more mutton than any point on the Northern Pacific.

A great cattle and horse market.

Only one city of a similar size exceeds its postoffice business.

A wide-awake and orderly citizenship.

The best lighted city in the Northwest.

A delightful climate.

High educational facilities. Churches and societies.

Free public library.

Waterworks. Sewerage system.

Electric light and power.

City free mail delivery. Rural free mail delivery.

Fine hotel accommodations.

Graded and shady streets. Beautiful lawns and gardens.

Thoroughly equipped fire department.

Modern opera house.

Free lands for homeseekers.

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I have for sale in the city and surrounding country everything in the line of real estate that is worth having, especially lands under irrigation, sheep ranches, range lands, and suburban city property.

References: All banks and leading business houses in Billings, of which city I am at present serving as mayor.

Correspondence solicited.

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MONTANA

is the Capital of the Treasure State

Of this magnificent State, HELENA is the capital city and occupies an unrivaled situation. It is the natural distributing center, having ample banking facilities, railways and lines of travel, and located in about the center of population, with schools, churches, libraries, and every social advantage for a city of homes, which it pre-eminently is.

The mining of valuable metals done within a radius of 50 to 75 miles around HELENA exceeds any other district in the world.

For climate, soil, water for irrigation, mining, cattle, sheep, and other stock raising and farming, this district offers great inducements in the way of markets, all products being in demand at good prices.

For manufactures in the city, and for the large smelting interests at East Helena, power is generated from dams in the Missouri River near the city; 12,000 horse power is now used, and other dams projected which may generate 40,000 to 50,000 horse power.

For Information Address

Sec'y Business Men's Association
Helena, Montana

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MONTANA

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BUTTE, MONTANA

BUTTE, MONT.

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YAKIMA VALLEY

The Upper Snake River Valley

IN BINGHAM COUNTY IDAHO

BY FAR the most fertile portion of the great Snake River Valley lies in that subdivision of the "Gem of the Mountains" known as Bingham County. The fertile and well improved lands lie in a wide expanse on either side of the Snake River, which, in all its grandeur, flows through about the central part of the Valley from end to end.

The water for irrigation in this section of Idaho is taken principally from this great river and is flowed out upon the land through great systems of canals, constructed at vast expense for the sole purpose of irrigation. A great many truthful and meritorious claims have been made for different sections of country in the many States of the Arid West, but it has never been disputed that the abundance of natural resources by way of agricultural, fruit, and grazing lands and water for irrigation, power, and other purposes, is equal to this locality.

As a proof of the vast agricultural resources of this section of the Valley, the productiveness of the soil, and the unlimited supply of water, capital has sought the field, and under the name of the Idaho Sugar Company, a beet-sugar factory, the largest in the United States, is now being constructed at Idaho Falls. It will have a capacity for handling 240,000 tons of beets per season, which are estimated to require 12,000 acres of land to produce.

The Upper Snake River Valley in Bingham County, Idaho.

While this is the only sugar factory at present in the State of Idaho, and by far the most important manufacturing institution in the Valley, there are mills and factories of less importance, and a great and profitable field for the investment of capital in all legitimate lines of business and manufacture is here in its infancy.

INVESTORS AND HOMESEEKERS WILL DO WELL TO INVESTIGATE THIS PORTION OF IDAHO BEFORE INVESTING OR LOCATING ELSEWHERE.

On either side of the Valley are low ranges of mountains, extending back for many miles, which afford a vast wealth of grazing lands, and which may be occupied at all seasons of the year by herds of live stock of all kinds. Flowing down from and through these low ranges are many mountain streams of clear, cold water, which invariably abound with mountain trout, while along the streams and in the hills feathered and other game abounds.

Idaho Falls, located in the heart of this Valley, is the principal city in Southeastern Idaho, and is destined to be the largest city in the State in the near future. Among its many attractions are a $40,000 school house, nine churches of the leading denominations of the State, with commodius, neat, and substantial church buildings, many substantial and costly business blocks, and elegant residences.

The city is located on the east bank of the great Snake River, on the main line of the Oregon Short Line Railroad, and is the junction of the St. Anthony branch of the Oregon Short Line, leading to the Yellowstone National Park.

Beautiful mountain scenery surrounds the city in every direction at various distances of view, and the climate is one of the most delightful in the West.

Address A. V. SCOTT, Secretary, Executive Committee, Idaho Falls, Idaho, for further information.

Pocatello

The Railroad Center of Idaho and Gateway to the Northwest

Altitude, 4,464 ft. ***Population, 6,200***
Public Schools ***State Academy***

Pocatello is the most promising young city in arid America to-day. It is situate in the south pocket of the great Snake River Valley, which furnishes the best example of irrigated lands on the continent. Here is the junction point of the main trunks of the Oregon Short Line, the one connecting Missouri River points with Portland and the Northwest; the other, Denver and Salt Lake with Montana and British Columbia. The main shop plant, costing $1,250,000 and having a capacity of 1,200 men, is located here. The surrounding mountains contain ledges of copper and gold ore, formerly a part of the Fort Hall reservation but opened to location and entry in 1902. The agricultural lands opened at the same time are to be irrigated by canals from the Snake River, the same being constructed to within a few miles of Pocatello and to be brought to the town this year. The city has two banks, two newspapers, three hotels, and churches of all denominations are established here.

For detailed information, address

CHAMBER OF COMMERCE
Pocatello, Idaho

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own and control

OVER 400 MILES OF IRRIGATION CANALS

in the Upper Snake River Valley and have for sale over

1000 IRRIGATED FARMS

all of which have perpetual water rights in these Canals

Water Rentals

average from 15 cents to $1.00 per acre

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Lewiston, Idaho *Clarkston, Washington*

A Brilliant Future: Why Not?

SITUATED in a deep, broad valley at the junction of the Snake and Clearwater rivers, on the only water-grade route from the Rocky Mountains to the Pacific Ocean, through the vast, irregular inter-mountain plateau, at the only broadening of the cañons for hundreds of miles, Lewiston-Clarkston is the logical "Key to the Pacific Northwest," the gateway to the ocean down the Clearwater, Snake, and Columbia rivers from the mountainous plateaus of the interior.

It is the necessary distributing center for 25,000 square miles of tributary territory—a rich, new wheat country that now yields 8,000,000, and will soon yield 20,000,000 bushels per year; a dozen different gold, copper, silver, iron, and coal mining camps of great promise; a lumbering region as rich as the richest of Michigan's best days in that industry; fat stock ranges and fertile lands.

It shall have an all-the-year open water route to the ocean, it being the head of navigation, and now having rail and water traffic routes radiating in five directions.

It shall be the seat of manufacturing on a large scale; of wheat flour and other cereal products; of lumber, furniture, house-finish, doors, sash, boxes, etc.; of agricultural implements and machinery; of woolen goods; of paper and paper goods; of meat products; of boots, shoes, and articles of leather. Why not, with water-electric power and cheap coal, ample raw materials, cheap and quick transportation, and abundant markets?

With a population in 1903 of 10,000, it will have 25,000 within five years or less! Why not?

The Business Opportunities

in the Lewiston Country include:

(1) *Wheat Growing*, where yields run from 30 to 60 bushels per acre, with over 2,000,000 acres of finest grain land.

(2) *Live Stock*, where the increase is rarely less than 40 per cent, and cattle graze all winter. No deep snows; no severe cold.

(3) *Mining* for copper, gold, silver, iron, and coal, where the rich prospects offer ample opportunities to newcomers.

(4) *Flour Milling* for the export Asiatic, Alaskan, and South American trade. Our wheats are acknowledged the best grown west of the Rocky Mountains.

(5) *Saw Mills* to utilize eight billion feet superior white pine timber, and much more of yellow pine, fir, tamarack, and cedar. Lewiston-Clarkston offers the only sites economically available for this manufacture.

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(7) *Flax Fiber Mill.* In 1902 about 480,000 bushels of flax grown. Fiber went to waste.

(8) *Manufacture* of agricultural implements and machinery.

Paper Mill to utilize straw and wood refuse.

(9) *Manufacture* of all lines of flour, bagging, twines, woolens, paper, furniture, lumber, machinery, butter, cheese, brooms, canned fruits, etc.

Ample Raw Materials. Cheap Power. An Unequaled Distribution Point.

Address, Secretary Commercial Club,

LEWISTON, IDAHO.

Secretary Business Men's Association,

CLARKSTON, WASHINGTON.

Lincoln County, Idaho

LINCOLN COUNTY, IDAHO, is situated in the southern part of the State and its resources are agriculture, fruit, and stock-raising. From the Blue Lakes fruit farm, in this county, exhibits of apples, pears, peaches, apricots, and prunes were made at the World's Fair, the Trans-mississippi Congress, and the Paris Exposition, and were awarded first prize in each instance.

SHOSHONE is the county seat of Lincoln County and has a population of about 1,500. The town boasts of some of the largest mercantile institutions in the State, and all lines of business are represented. A new national bank was opened on January 20, 1903, and has been doing a splendid business. Hotels are first class and the best of accommodations are offered tourists. Fishing and hunting can be had in abundance, and sportsmen come here from all points, even from New York City. The town is located on the banks of Little Wood River and has ample water supply.

The farmers cut three crops of hay annually, and the climate is unexcelled in any State in the Union.

The great Shoshone Falls are twenty-five miles directly south of the village of Shoshone and are connected with the railroad by a stage line, while in the village are numerous conveyances to transport private parties to this, the rival of Niagara. At Shoshone Falls an immense electric power plant is being constructed, from which power is to be transmitted to Shoshone, Hailey, Salt Lake City, and Ogden, and it will also furnish power for an electric railway from the Falls to Shoshone.

The second largest irrigation proposition in the world is now being constructed in this county and in Cassia County adjoining. This great irrigating canal is diverted from Snake River, twenty-three miles above Shoshone Falls. It is sixty-nine miles long, eighty feet wide at the bottom, carries 3,400 cubic feet of water per second, and places under irrigation 371,000 acres of the finest land in Idaho.

In water power this county rivals any one section in the world, its facilities consisting of the great Shoshone Falls, with a Fall of 210 feet; the Twin Falls, three miles above, with a fall of 184 feet; Auger Falls, with a fall of 136 feet; Banker Falls, with a fall of 50 feet; Salmon Falls, with a fall of 80 feet, and many lesser falls. This power is now being harnessed and the near future will place Lincoln County in the ranks of the great manufacturing counties of the West.

To reach the lands of the Twin Falls Land & Water Co., leave the railroad at Shoshone, where conveyances will be found ready to take parties over this land. For particulars write to

TWIN FALLS LAND & WATER CO.,

Main Office, 221 Southwest Temple Street, SALT LAKE, UTAH.

"THE LONE TEPEE."

All Gone Now!

Are the original inhabitants of the famous "Palouse Country" of Eastern Washington. Most of this country is in WHITMAN COUNTY, which has probably exported more wheat than any county in the United States. (Not less than 9,500,000 bushels were shipped out, of the 1901 crop, and the 1902 crop was not much less.)

Prof. Mark Harrington, when President of the State University of Washington, said of the Palouse soil:

"This fine soil is very fertile. It seems to be of a kind which is perpetually fertile. In the whole world I know of only one locality which has a similar soil This is the north of China, in the two provinces of Shansi and Shensi, west of Peking. To me the Palouse soil seems to be the same, from which I am led to believe that it is inexhaustible.

"We estimated what population the Palouse Country was able to maintain. Our conclusion was that one hundred times as many people could be supported by its soil as now live there.

"Another characteristic of the soil in that country is the small fall of water needed to raise the crops. This, of course, is another advantage. Then there are no trees or rocks to be removed. Put in the plow and then plant the seed."

While celebrated for wheat, the Palouse Country has been found to be well adapted for producing magnificent fruits of all kinds, vegetables of large size and fine quality, and many of the tame grasses.

Whitman County has (Nov., 1902) over 280 miles of paying railroads and 80 miles under construction, 15 banks, over 160 schoolhouses, a dozen towns of from 300 to 3,000 population, several rural free delivery mail routes, and hundreds of miles of public and private telephone lines. The State Agricultural College is located at Pullman and has nearly 700 students enrolled.

COLFAX is the county seat and chief business point, and is one of the best business towns of its size in America. People coming West for new location will find here rich lands at moderate prices, and all advantages. For further information call on or address,

CHAMBER OF COMMERCE,

COLFAX, WASHINGTON.

Bird's-eye View of Middle Falls and Manufacturing District, Spokane.

SPOKANE

the Metropolis of the Inland Empire

THE IMPERIAL CITY—seven times better than any other city in the Pacific Northwest, the land of sunshine, flowers, fruit, grain, gold, silver, lead, copper, marble, timber, and all that nature can offer in opportunities for the acquirement of wealth. : : : Where there are no killing frosts to injure crops, no cyclones, no floods, no destruction from lightning, and where sunstroke is unknown except in name.

SPOKANE

1 SPOKANE, the greatest agricultural center in the United States—more than 30,000,000 bushels of wheat produced annually within a radius of 200 miles of **SPOKANE,** in the celebrated Palouse and Big Bend farming belts.

2 SPOKANE, the distributing center for all of the Palouse country, Big Bend country, and the Colville and Kalispell valleys.

3 SPOKANE, the geographical and distributing center of the famous Cœur d'Alene silver-lead mines of Northern Idaho. The gold and copper mines of Rossland and the boundary country, and the Slocan in British Columbia, and of Republic, Washington. Also of the famous coal fields of the Crow's Nest country, and of the Okanogan country with its rich agricultural and mineral resources.

4 SPOKANE, the distributing center for the great, growing lumbering districts of Eastern Washington and Northern Idaho, which have the largest white pine forests in the world. The lumber output for 1902 is estimated at $20,000,000.

5 SPOKANE, with a water-power surpassed only by Niagara, will become the greatest manufacturing city of the Pacific Northwest. The maximum power of the Falls is between 200,000 and 300,000 horse-power, of which about 15,000 horse-power is utilized. **SPOKANE** offers better returns for the establishment of manufacturing industries than can be found anywhere else in the West, because of its growing population and cheap water-power.

6 SPOKANE, the railroad center of the Pacific Northwest. Transcontinental trains arrive and depart at **SPOKANE** over four lines—the Northern Pacific, Great Northern, Burlington, and O. R. & N. Co. Branch lines radiate to every part of the **INLAND EMPIRE** of which **SPOKANE** is the hub. Look at the map.

7 SPOKANE, last, but not least, for business opportunities for business men. To be ready when your opportunity comes is the secret of success. Then get ready. **SPOKANE** offers you that opportunity. For detailed information, address the

SPOKANE CHAMBER OF COMMERCE

L. C. MONROE, Secretary **F. E. GOODALL, President**

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(INCORPORATED)

ESTABLISHED 1887

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We are agents for the Empire State, the Spokane Club, and many other fine blocks, also much other business and residence property in Spokane.

We write any kind of insurance; we loan money at from 5 to 8 per cent per annum.

We sell improved business property that will pay 8 to 10 per cent per annum, net.

We sell grazing and raw farm lands in Eastern Washington at $2.00 to $10.00 per acre.

We sell improved farms at $10.00 to $60.00 per acre.

Call at the oldest real estate and land office in Spokane for the best bargains.

As to our reliability we refer you to any bank or leading business man in Spokane.

ARTHUR D. JONES & CO.
907 RIVERSIDE AVENUE

SPOKANE

The Metropolis of the Inland Empire

SPOKANE being the center of a large country rich in mines and farming lands, there are many opportunities for the investor and homeseeker. Here the investor can secure 7 per cent interest on his money with absolutely good security, and there are many opportunities for the purchase of timber and farming lands.

To the Homeseeker

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Who will gladly submit for either the investor or the homeseeker a statement of the lands or investments of any kind or nature. Those interested will do well to correspond with them. Any bank in Spokane will tell you of their standing.

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JULIA P. BAILEY, Principal

2209 Pacific Ave. SPOKANE, WASH.

The Home of the Big Red Apple

THE TOWN OF WENATCHEE

WENATCHEE, the county seat of Chelan County, is situated within one mile of the exact center of the State of Washington, close to the junction of the Wenatchee River with the Columbia. It has more than 2,500 people. Two years ago it had scarcely 500. It has doubled in size during the past year. Last fall it shipped 1,000,000 bushels of wheat, which was brought to this point by the Columbia River steamboats, and 300,000 packages of fruit, aggregating over 300 carloads, which was raised in the Wenatchee Valley. There are now six large river steamboats running up the Columbia River from this point, and another one is building.

During the year 1902 ten large brick business buildings and over 100 dwellings were erected. Most of the latter are residences costing more than $1,500. The Wenatchee Milling Company, which has a 100-barrel-a-day plant, is building an addition to increase its capacity to 250 barrels a day.

Wenatchee has a $14,000 brick school building, which is now crowded to overflowing, and is building another of equal size. Chelan County has here a $15,000 brick court house. The town has water works, electric lights, and a telephone system. Wenatchee is the principal shipping point on the Great Northern Railway between Spokane and Puget Sound. From the bank of the river the land rises in a smooth, easy slope to the foothills two or three miles back. The site

The Wonderful Wenatchee Valley

is sightly, well drained, and attractive. Spokane is 174 miles east and Seattle 164 miles west.

Wenatchee's tributary country includes on the north the gold and silver mining region of the Okanogan Valley, now supporting nearly 5,000 people, and destined to become one of the finest sections of the United States. Then comes the fertile valley of the Okanogan River, extending from far up in British Columbia to the Columbia River. Below the Okanogan is the Methow Valley, fully as fertile, and containing at the present time the finest unentered government agricultural lands to be obtained. Along the Methow are also fine gold and coal mining properties which are being rapidly developed. Next in order comes Lake Chelan, well ranked among the finest scenic attractions of the West—a silver lake sixty-five miles long, from whose shores on either side abrupt mountains rise far above the snow line. At the head of this lake lie rich silver mines, while at its foot is a fine fruit-growing section, the whole making the most delightful summer resort. Along the Entiat River just below are numbers of fine fruit farms and room for many more. To the east of the Okanogan and north of the Columbia River lies the great Colville Indian Reservation, the north half of which has recently been thrown open to settlement, containing thousands of acres of fine farm lands and rich mineral deposits. South and east of the Columbia River, encircled by its "Big Bend," is the Big Bend Plateau, the finest of cereal producing sections and stock ranges.

The townsite and much of the fine fruit land immediately adjoining is owned by the WENATCHEE DEVELOPMENT CO., Arthur Gunn, Manager, Wenatchee, to whom inquiries for further information may be addressed.

Wenatchee, the Home of the Big Red Apple

THE BEST IRRIGATED FRUIT LANDS ON EARTH

are in the

Wonderful Wenatchee Valley

in the exact center of the

EVERGREEN STATE OF WASHINGTON

Irrigation is King

A larger net annual revenue per acre can be taken from irrigated lands, in fruit culture, near Wenatchee, than from any other agricultural or horticultural lands in the United States. This is demonstrated positively on dozens of fruit ranches at Wenatchee, and an investigation will convince any person of the correctness of our statement.

The ***High Line Canal,*** recently constructed by the ***Wenatchee Canal Company,*** will irrigate all of the tillable lands in the valley, and the Company has for sale a limited area of the choicest of these lands.

For full particulars call on or address

Wenatchee Canal Co.

Wenatchee, Washington

ALL ROADS LEAD TO

Walter M. Olive

WHO SELLS

Wagons, Farm Implements
Ammunition, Guns, Sporting Goods
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Tinware, Kitchen Furnishings
Every kind of Hardware
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Oils, Paints, Varnishes, Glass
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Vehicles of all kinds
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WALTER M. OLIVE

MISSION, WASH.

T. S. Land, Cattle & Fruit Co.

THAT FARMING responds, with large and certain profits, to careful, systematic, and intelligent management is prominently exemplified in the case of an irrigated fruit and stock ranch situated in the central part of the State of Washington.

Near the town of Mission, in the Wenatchee Valley, is the headquarters of the T. S. Land, Cattle & Fruit Company, or, as it is more usually spoken of locally, the Tibbits-Scaman Company —M. O. Tibbits, J. A. Scaman, and D. L. Tibbits being the officers and largest stockholders. It is a stock company, organized under the laws of the State, and is managed and operated on business principles, with the same care and attention that characterize a well-regulated banking, manufacturing, or mercantile establishment. Here it is intense farming—to make every foot of ground produce to the utmost with the least outlay—to count the cost, but not to spoil the product either in quantity or quality by a foolish system of economy.

The specialties of the T. S. Company are winter apples and fine blooded cattle, both beef and dairy—and in these are the biggest profits. Minor details are, however, not neglected. There is a hennery—complete—in which every hen, by a proper system of feeding and handling, is made to pay a profit of twice her value each year; a dairy—with every modern facility—the cows each paying a net profit of from $50 up per year, those that do not being sent to the beef herd; a sawmill and box factory for manufacturing lumber for buildings and other purposes, and where the fruit boxes are made; a vegetable garden which supplies the boarding house with the best that can be grown and also returns from $100 to $300 per acre yearly from melons, cantaloupes, tomatoes, wax beans, sweet corn, etc., sent to the markets of Seattle and other Puget Sound cities; a blacksmith and carpenter shop for the repairing of all machinery, tools, etc.

The sheltered location, chemical construction of soil, long period of sunshine, with no summer frosts or pests of any kind, together with good markets, make a well cared for orchard in the Wenatchee Valley a veritable gold mine. There are no failures of crop. From $200 to $500 worth of fruit per acre annually is an average yield. Figure what this means from the 500 acres of orchard that will soon be under cultivation by the Tibbits-Scaman Company!

The beef cattle pay a net profit of 25 per cent. They are fed on the range bordering the eastern foothills of the Cascades from nine to ten months of the year, without cost or expense of any kind, and are wintered on alfalfa hay grown upon the company's own lands at a total cost of $1.10 per ton. An average of eight tons per acre is grown during a summer. It is cut three times.

The land holdings of the company cover 2,000 acres—one-half of it under irrigation. This is not large compared with wheat farms or stock ranges, but for an irrigated farm where every acre is tilled to its utmost and made to produce from $100 to $500 annually, and where bearing orchards pay a high rate of profit on a valuation of $1,000 per acre, it means a big business—a large profit.

J. FURTH, *President*
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The Puget Sound National Bank of Seattle

Cable Address "Furth"

We use Liebers Code

Capital = **$300,000**

Surplus and Undivided Profits **$150,000**

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SHIP AND ENGINE BUILDERS

STEEL AND WOOD VESSELS, STEAM OR SAIL

FOR OCEAN, SOUND, AND RIVER SERVICE

FOUNDRY, MACHINE, BOILER, and FORGE SHOPS

LARGEST TOOLS AND EQUAL TO ANY REQUIREMENT
HEAVY FORGINGS A SPECIALTY

DRY DOCK AND MARINE RAILWAY

Two-Section balanced floating dry-dock, 400 ft. long, 60 ft. between towers: patent steel-wedge keel blocks; 12,000 tons displacement

CAPACITY OF MARINE RAILWAY 1,500 TONS

SHIP CHANDLERY, ENGINEERS' SUPPLIES

SAW AND PLANING MILL

CAPACITY: TIMBER, 48 INCHES SQUARE, 125 FEET LONG
INCLUDING EVERY DESCRIPTION OF ROUGH,
DRESSED, OR KILN DRIED

YELLOW FIR, RED CEDAR, or SPRUCE

We make a specialty of long and large timber and can dress four sides 20x30 inches

SPARS THE LONGEST, LARGEST, CLEAREST AND BEST IN THE WORLD; ROUGH OR HEWN

PILES OR TIMBER OF ANY DESCRIPTION

CARS FROM ALL TRANSCONTINENTAL ROADS

ENTER OUR YARDS AND DOCKS

DOCK SHIPMENTS TO ALL PARTS OF THE WORLD

ELECTRIC CRANE capacity to transfer 75 tons from car to vessel

FIRST-CLASS BATTLESHIP NEBRASKA

15,000 TONS DISPLACEMENT, NOW BEING CONSTRUCTED FOR THE UNITED STATES GOVERNMENT

WE INVITE CORRESPONDENCE FROM ALL PARTS OF THE WORLD

BALLARD, WASHINGTON

LARGEST
SHINGLE MANUFACTURING CITY
IN THE WORLD.

BALLARD'S WATER FRONT.

BALLARD IS ONLY 20 MINUTES' RIDE FROM SEATTLE BY THE GREAT NORTHERN AND NORTHERN PACIFIC RAILWAYS AND ELECTRIC LINES.
THE INTERESTS AND ENVIRONMENTS OF THE TWO CITIES ARE IDENTICAL.

BALLARD IS SITUATED ON SALMON BAY, A DEEP-SEA HARBOR, WHERE VESSELS CAN LOAD DIRECT FROM THE MILL WHARVES. IT IS THE FINEST LOG HARBOR IN THE WORLD.

BALLARD, WASHINGTON.

BALLARD IS AN IDEAL LOCATION FOR MANUFACTURING PLANTS.
IS NOW THE CENTER OF THE LUMBER INDUSTRY OF PUGET SOUND. PRESENT PAY-ROLL, $150,000 PER MONTH.

BALLARD IS THE ENTRANCE TO THE UNITED STATES GOVERNMENT LAKE WASHINGTON SHIP CANAL.
THERE IS NO FINER CLIMATE, LOCATION, OR BETTER INDUCEMENTS THAN AT BALLARD.
THE GROUND RISES GRADUALLY FROM THE WATER FRONT TO THE MOUNTAINS, AND AFFORDS THE BEST SITES FOR A CITY ON THE SOUND.
THE NUMBER OF HOMES HAVE DOUBLED IN THREE YEARS, AND PROPERTY VALUES HAVE INCREASED 25 PER CENT PER ANNUM FOR THE PAST FOUR YEARS.

BALLARD PRESENTS WONDERFUL OPPORTUNITIES FOR MODERATE CAPITAL TO ESTABLISH INDUSTRIES.

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Dealers in Timber

Mines, Mining and Other Stocks,
Clay Beds, and Coal Lands

Those who deal with us make no mistake, as we are posted on the properties we handle.
References furnished when required.
Inquiries and investigation invited.

Office, 1305 Elk Street,
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Lumber

Important to the Buyer

To know that we are the largest manufacturers and rail shippers of the famous ***White-as-Milk*** Washington Spruce on the Pacific Coast.

We make a specialty of :

Spruce Siding, Finishing, Porch Decking, Box Shooks, Lath.

Fir Flooring, Tanks, Columns, Newels.

Cedar Shingles.

For shipment in mixed car lots.

Labor

Important to the Working Man

To know that we constantly employ, both winter and summer, in and around our saw mills, shingle mills, box factory, tank factory, planing mills, etc., ***over 500 men and boys,*** and can at all times furnish employment to parties in search of work. Capable employes promoted as opportunity offers.

GRAYS HARBOR COMMERCIAL CO.

C. F. WHITE, Manager,

COSMOPOLIS, WASH.

TACOMA

Is county seat of Pierce County, largest seaport on the Pacific Coast except San Francisco, terminal port of more trans-Pacific steamships than any other city on the Pacific Coast, nearest port to the best coal and only good coke on the Coast, center of more water-power than any other city on the Coast.

Population January 1, 1903, estimated 60,000.
Public schools, 22; teachers, 211; children of school age, 11,261.
Number of wage earners, 7,878.
Value of output of manufactures, $25,000,000.
Lumber cut, 1902, 304,000,000 feet.
Shingle cut, 1902, 347,565,000.
Lumber shipped by water, 1902, 108,000,000 feet.
Lumber shipped by rail, 1902, 4,932 cars.
Shingles shipped by rail, 1902, 1,100 cars.
Value of smelter output, $4,765,941.
Capacity of grain warehouses, 5,500,000 bushels.
Capacity of coal bunkers, 24,000 tons.
Building permits issued, 1902, 896.
Postoffice receipts, 1900, $69,826; 1901, $80,305; 1902, $94,035.
Telephones in use January 1, 1900, 1,767; 1901, 2,655; 1902, 3,527; 1903, 5,136.
Total foreign exports, 1902, $19,091,491; other twelve ports on Puget Sound, $15,594,532.
Total ocean commerce, foreign and domestic, 1902, $40,431,663.
Tea imported, 1902, 5,466,247 pounds; value, $851,850.
Matting imported, 1902, 13,234,206 yards; value, $1,080,000.
Exports to Alaska, $1,100,000 yearly.
Deep sea vessels cleared, 1902, 890.
Deep sea vessels entered, 1902, 888.

There was shipped from the city of Tacoma during the year 1902, 11,829,093 bushels of wheat; 1,351,224 barrels of flour, which, reduced to wheat, makes a total of 17,909,601 bushels of wheat. This was exceeded by only two ports in the United States.

Average annual rainfall, 42 inches.

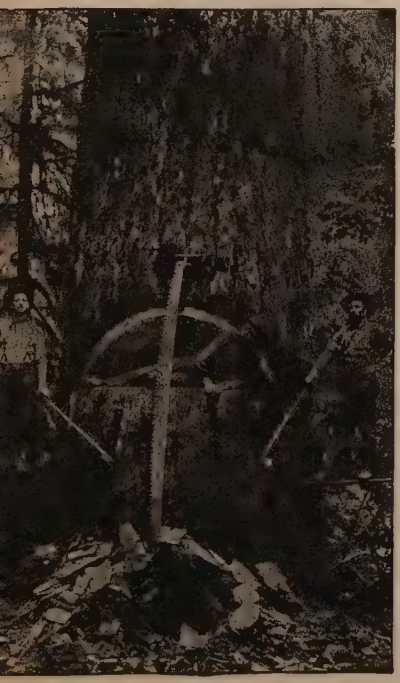
TACOMA has

The longest wheat warehouse in the world, the largest lumber mill in the world, the largest sash and door factory in the United States, the largest smelter on the Pacific Coast, the largest cold storage plant on the Pacific Coast, the most complete and extensive railway terminals in the United States, the finest harbor in the world, the largest coal bunkers on the Pacific Coast, a larger flour trade with the Orient than any other port in the United States.

Timber and Farm Lands

"GOVERNMENT EXPERTS SAY THAT THERE ARE

66 Billion feet of Fir,
16 Billion feet of Cedar,
14 Billion feet of Hemlock, and
6 Billion feet of Spruce Timber



STANDING WEST OF THE CASCADE RANGE OF MOUNTAINS IN THE STATE OF WASHINGTON."

WE HAVE SOME OF IT FOR SALE

We also have between 300 and 400 low-priced Washington farms to dispose of.

Send for printed list and our pocket map of Washington.

The Syndicate Company,
(Incorporated)
211-212-213 California Building,
TACOMA, WASH.

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NO CITY IN THE WEST OFFERS BETTER OPPORTUNITIES THAN

Tacoma

FOR SAFE AND PROFITABLE INVESTMENTS.

Business and Residence Properties pay from 6 to 12 per cent. Mortgages from 5 to 7 per cent.

We deal extensively in County and City Warrants and Bonds.

We have a department for Collecting Rents, Paying Taxes, and Taking Charge of Properties for Resident and Non-resident Owners.

Our business was established in 1892 and we can furnish satisfactory references East and West.

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(Incorporated)
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Capital of Washington
is a Beautiful City at the Head of Navigation
on Puget Sound

POPULATION :: 7,000

Bank Deposits Frequently Exceed $3,000,000

LOW TAX RATE

Transportation by Rail and Water to all parts of the World

FREE SITES FOR FACTORIES

For Particulars, address:

OLYMPIA CHAMBER OF COMMERCE

Olympia, Capital of Washington.

VIEW ON MAIN STREET,
BUSINESS PORTION OF OLYMPIA, WASHINGTON.

WHEN going West, don't fail to investigate the beauties and advantages of Puget Sound and of Olympia, the attractive and prosperous city at its inland extremity. Fine scenery, healthful climate, fruitful soil, mammoth lumbering operations, splendid resources, all conspire to attract the homeseeker and investor. Olympia was awarded World's Fair gold medals for fruits, and prizes for farm products.

OLYMPIA OYSTERS
EVER HEAR OF THEM?

As an article of commerce, they bring in hundreds of thousands of dollars annually. As an article of diet, they make you laugh and grow fat.

☞ *Read Olympia's write-up, page 236, in this publication.*

HENRY DRUM GEO. E. THOMPSON

THOMPSON & DRUM

Investment Brokers

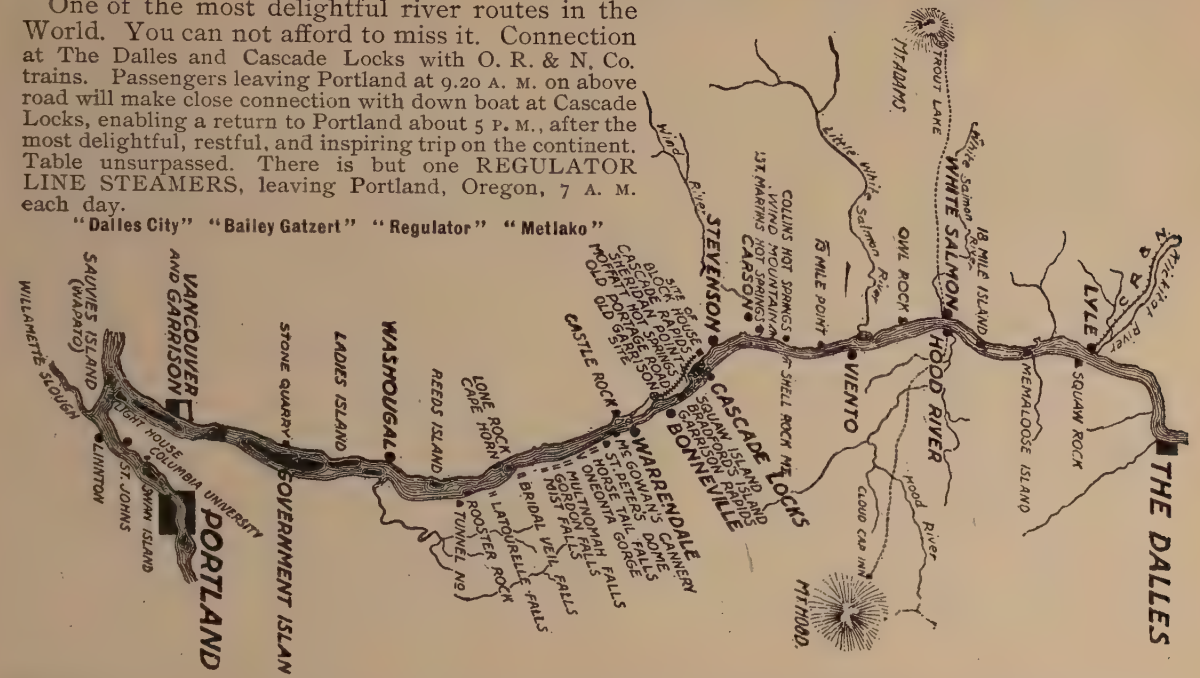
OLYMPIA (Capital City) WASHINGTON

TIMBER	If you want to buy timber or desire a logging or manufacturing business, write us. We know the business from successful experience.
OYSTERS	An extensive and very profitable industry in this locality. The demand for the native "Olympia" oyster will always exceed the supply. It is a very small and delicious oyster, highly prized by Eastern epicures. Only ordinary intelligence required to make a success—no previous experience necessary. Eastern oysters transplanted and successfully grown here. Excellent opportunities for use of small or large capital in opening new beds and syndicating established plants. Write us. We say above from experience.
OLYMPIA REAL ESTATE	State capital and county seat Thurston County. Population, 6,000; deep-water commerce; two railroads; fine agricultural and horticultural lands. Chief industries, lumbering, coal, and oystering. We can sell you a city home, business property, suburban acreage, or a good farm.
Reference	A twenty years' residence, practical business experience, and extensive State acquaintance permit us to say: Write to any State official, to our County officers, to our local banks, or any banker in the State, concerning our integrity or ability to serve you satisfactorily.

COLUMBIA RIVER SCENERY

One of the most delightful river routes in the World. You can not afford to miss it. Connection at The Dalles and Cascade Locks with O. R. & N. Co. trains. Passengers leaving Portland at 9.20 A. M. on above road will make close connection with down boat at Cascade Locks, enabling a return to Portland about 5 P. M., after the most delightful, restful, and inspiring trip on the continent. Table unsurpassed. There is but one REGULATOR LINE STEAMERS, leaving Portland, Oregon, 7 A. M. each day.

"Dalles City" "Bailey Gatzert" "Regulator" "Metlako"



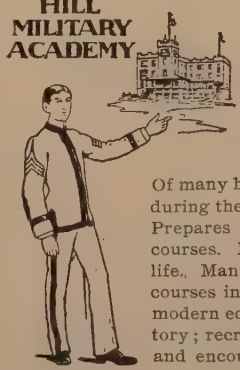
WHARF
FOOT OF ALDER STREET

REGULATOR LINE STEAMERS

PHONE, MAIN 914
PORTLAND, ORE.

PORTLAND, ORE.

HILL MILITARY ACADEMY



The Success and High Standing

Of many hundreds of Dr. Hill's graduates and former pupils during the last 24 years indicate the merits of his methods. Prepares for college in Classical, Scientific, and English courses. Regular course is practical training for business life. Manual training and mechanical drawing. Special courses in modern languages and music. New buildings, modern equipment, private sleeping rooms, no open dormitory; recreation rooms, large armory; Athletics promoted and encouraged; chemical and physical laboratories; experienced faculty. *A Boarding and day School for Boys of all ages. Younger Boys separate.*

FOR CATALOGUE, ETC., APPLY TO **DR. J. W. HILL, Principal**
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THE PRATHER INVESTMENT COMPANY

The Old Reliable Real Estate Agents

Abstracts, Conveyancing, Real Estate, Insurance, and Money to Loan

LOTS AND BLOCKS FOR SALE
TAXES PAID FOR NON-RESIDENTS
CORRESPONDENCE SOLICITED
TOWNSHIP PLATS AND BLANKS IN STOCK

Special attention given to the sale of fruit lands in the Hood River Valley

Telephone No. 51 **Hood River, Oregon**

WASCO

THE LAND OF GRASS

is the first county of Eastern Oregon, and The Dalles is its county seat; is the gateway to the "Great Inland Empire"; is situated at the head of navigation of the Middle Columbia River on the line of the O. R. & N., eighty-eight miles east of the city of Portland, Oregon's metropolis.

It has a population of 4,000.

It has five public school buildings and nine church buildings.

It has a larger volume of banking business than any other city of like population in the United States.

It has a United States land office.

It has an open river to tide-water and the lowest freight rates of any point on the Columbia River.

Its merchants supply an extensive trade and do a large volume of business.

It is in the center of the best fruit belt in the Northwest.

It has large flouring mills driven by electric power generated at a 160-foot falls of a mountain stream, twenty-seven miles distant.

It is the county seat of a county seventy miles square, whose resources are many, varied, and inexhaustible.

It grows a million bushels of wheat, has fine salmon fisheries, ships 250 tons of canned salmon, a quarter of a million dollars of green fruit of excellent flavor and

shipping qualities, any variety of which makes a standard brand of canned goods.

Its winter apples sell higher than Riverside oranges.

It is the Western home of the Italian prune, and has taken the county diploma and eleven out of thirteen possible prizes at a Northwest competitive fruit exhibit. From the luscious strawberry to the large prize apple of the Centennial, it excels.

It is the greatest original wool shipping point in the United States and has shipped eight million pounds in one season.

Its climate is the Italy of Oregon, and it has seventy-five more out-door working days in a year (Sunday excepted) than any Pacific Coast county.

It has a varied altitude of from 100 feet above the sea level to the limit of perpetual snow.

It has the grandest scenery and more of it per capita than any place in America.

It wants the economic home-builder.

It wants the extensive investor in every department of its resources.

It wants manufacturers and will supply them with electricity for motive power and will furnish any required amount of undeveloped and untransmitted power from its mountain streams and waterfalls, and wants a hundred thousand energetic, active, prosperous people to help to supply the wants of the world, and wants your careful consideration of its wants.

Address,

The Dalles
Commercial and Athletic Club,

N. WHEALDON, President,
MAX A. VOGT, Secretary.

Real Estate

and Promoting

Call for any requisite of

Agricultural Lands

from a small home farm up to section tracts of five to twenty-five square miles, or any desired amount of fruit lands, from small tracts for small fruit to any desired tract for a commercial orchard of prunes or winter apples. Quality and superior results unequaled.

Or for a small combination farm for grain and grazing, or a 32,000-acre cattle plant with extensive adjoining range, stocked and equipped, or a whole grant of 450,000 acres. Or

Timber Land

yellow pine, fir, or mixed varieties from a single claim to 65,000 acres. Or irrigated lands, city property, or business locations. Or

Mining Claims

or groups of mines, valuable clay deposits, or mineral land.

Call or write and receive Prospectus and price. Address

N. WHEALDON,

THE DALLES, WASCO COUNTY, OREGON

HOMESEEKERS IN THE PACIFIC NORTHWEST

Your attention is called to the lands of the Eastern Oregon Land Company, open for purchase and settlement upon easy terms.

The property of this Company, comprising 450,000 acres, lies in the counties of Wasco, Sherman, Gilliam, Wheeler, Grant, Baker, and Malheur, in Eastern Oregon, and consists of the alternate odd-numbered sections granted by the Government for the construction of a wagon road beginning at The Dalles, on the Columbia River, and terminating at a point on the Snake River four miles south of Nyssa, passing through the towns of Moro, Grass Valley, Shaniko, Mitchell, Dayville, Canyon City, Prairie City, and Vale. It is, therefore, diverse in climate and topography, and the lands comprise farming, grazing, timber, and mineral sections and a large country subject to irrigation.

The Oregon Railway & Navigation Co., the Oregon Short Line, and the Columbia Southern touch the grant at various points, and an extension of the Sumpter Valley Railroad is in process of construction into the John Day Valley. The Columbia River and Snake River also present easy and cheap forms of transportation for the products of all this country, in addition to which various railroads are projected into all parts of Eastern Oregon.

THE AGRICULTURAL LANDS in Sherman and Wasco counties are the perfection of such properties in the State of Oregon, producing from twenty to fifty bushels to the acre without fear of failure, within easy reach of mills and cheap communication with tide-water at Portland. These lands are fully occupied and carefully farmed.

THE GRAZING LANDS, of which the Company possesses in the neighborhood of 250,000 acres, are furnished with the famous bunch grass and other natural grasses and fodders, numerous springs and artificial wells at depths of from 50 to 150 feet. These grazing lands lie beyond Shaniko east to the Snake River. The valleys traversed in this country produce hay and alfalfa and afford warm winter ranges, while the uplands are plentifully supplied with rich, nutritious natural grasses. Sheep, hogs, and cattle are raised throughout this section. Direct and cheap communication with the Eastern and Western markets give all these products ready and profitable sale.

THE DALLES, OREGON

The development in the eastern end of the grant of **irrigation systems,** under the Government's supervision and by private enterprise, is opening up many thousands of acres of lands to crops hitherto impossible of cultivation. These lands, once held at moderate figures, have now advanced and, with the proof of the value of irrigation, are expected to continue their advance in price and productiveness.

THE MINERAL INTERESTS are scattered throughout the whole of this country in gold, silver, quartz, and placer mines, copper-lead, oil, and coal. The mines in the neighborhood of Canyon City have been worked profitably for many years, and those mines on the Greenhorn and Dixie mountains near Prairie City are paying handsomely, while modern methods of working the ores have opened up many old discoveries which had hitherto been regarded as unprofitable.

Oil prospects are being developed and tested in Malheur County with flattering prospects of success at the present time.

THE PLENTIFUL SUPPLY OF TIMBER throughout this country gives the necessary material for domestic fuel, as well as cheap material for fencing and farm improvements.

The timber, which lies principally on the ridges of the Blue Mountains, consists of pine, cedar, and tamarack of first-class quality, and with the development of the railway systems now contemplated will be within easy touch of the markets of the East and West. Of this class of land the Company owns in the neighborhood of 50,000 acres.

The attention of prospective settlers in Eastern Oregon is particularly called to the Eastern Oregon Land Company's **grazing, mineral, and timber lands** and **lands subject to irrigation.** These lands, as above described, are east of Shaniko in Wasco County, and run thence through Antelope, Mitchell, Antone, Dayville, Canyon City, Prairie City, Ironside, Dell, and Vale to Nyssa. It is the purpose of the Company to dispose of these lands upon easy terms—one-fourth of the price down, the balance in three payments, bearing interest at 8 per cent. Information and description of particular sections will be furnished on application to the

Eastern Oregon Land Company

Columbian Building, **San Francisco**

or to **The Dalles, Oregon**

Grande Ronde Valley

UNION COUNTY, OREGON

THE HOME-SEEKERS' DELIGHT

There are many fine spots in the United States but Grande Ronde Valley surpasses all. Here a failure of crop was never known. Fruits of all kinds grow in abundance without irrigation. Cattle are raised with great success and very cheaply. Abundance of summer range in our mountains.

Also are offered excellent investments from a loan standpoint—six per cent interest guaranteed. Some choice mining investments are offered.

For further information address

LA GRANDE INVESTMENT Co.

LA GRANDE, OREGON

GOLDENDALE, KLICKITAT COUNTY, WASH.

AMPLE WATER POWER.

Klickitat County lies just east of Cascade Range, with a frontage of 150 miles on the Columbia River. The western half of the county is accessible by river transportation to Portland and the sea.

More than half of the lands in the county are susceptible of cultivation. The remainder is fine grazing and timber land, a large portion of the latter being adapted to fruit-growing as well as to the various grains. The soil of the prairie lands is a black, sandy loam, and is very productive.

The principal crops grown are wheat, oats, barley, rye, and timothy on the bottom lands. Corn has also proved to be a paying crop. Alfalfa, brome-grass, and many other grasses are raised very successfully. Small fruits and vegetables are grown, equal, if not superior, to any other county in the United States. The hardy fruits—apples, pears, plums, prunes, and cherries—are particularly adapted to the soil and climate along the Columbia River, while peaches, grapes, and apricots grow to great perfection. No irrigation is needed in the county, although the yield is increased by that means in some sections.

Camas Prairie and Trout Lake communities are noted for their fine cattle and dairies. The butter from these sections is acknowledged to be the finest sent to Portland and the Sound markets. Klickitat County is one of the largest wool-producing counties in the State; a great many hogs are also marketed every year.

Cyclones, blizzards, tornadoes, hail, and damaging wind-storms are entirely unknown in the valley. The winters are short, compared with those in the East, and while there is considerable snow at times and the mercury goes below zero, such extreme weather never lasts long. The summer and fall months are delightful; there are only a few hot days, and the nights are always cool.

Most all of the religious denominations are represented, there being over twenty church edifices in the county. There are sixty-five school districts in the county. At Goldendale is located a public academy for the advanced training of students from the public schools.

Goldendale, the county seat, is situated in the famous Klickitat Valley, on the Little Klickitat River, and has a population of 1,500. There are two flour mills, run by water, with power sufficient for other manufactories. There are several sawmills near the city and tributary to it, and room for more. Goldendale boasts of the finest mountain spring water of any city in the State, and has an abundance of it, besides which there are hot water, soda, and sulphur springs.

Goldendale is the largest town in this part of the State, and is the leading point for the entire county. From it may be had a view of Mt. Hood, Mt. St. Helens, Mt. Adams, and some of the less prominent peaks, all snow-capped throughout the year — monuments of majestic beauty.

Extensive pine forests, coal lands, undeveloped mines of silver, gold, copper, etc., are to be had in an unimproved state. The county is replete in fine wheat and stock farms, such as the farmer of Iowa, Minnesota, Dakota, Missouri, or any other grain or stock-raising country would look at with pleasure. Here the grain grows with straw sufficiently strong to hold it up, and it never lodges; with fields free from noxious weeds, such as kale and cockle. Unimproved land can be had for from $5 per acre up, and improved land from $10 to $30 per acre, according to the improvement and location.

The Columbia River & Northern Railroad, now building through the valley, will open and connect it with the nearby railroads and thus supply the people with a long felt want, and develop the county to its fullest extent. Other railroads projected which will give Klickitat County better railroad facilities than any county in the State.

For health Klickitat County can not be beat. It has a fine climate, a bracing atmosphere, and the best water that can be had anywhere. For the sportsman the streams are teeming with speckled trout, while grouse, pheasant, prairie chicken, sage hen, and china pheasant are the feathered game, and bear, mountain lion, and deer are to be found in the mountains. For further information regarding this wonderful valley, address

SECRETARY OF THE BOARD OF TRADE,
GOLDENDALE, WASH.

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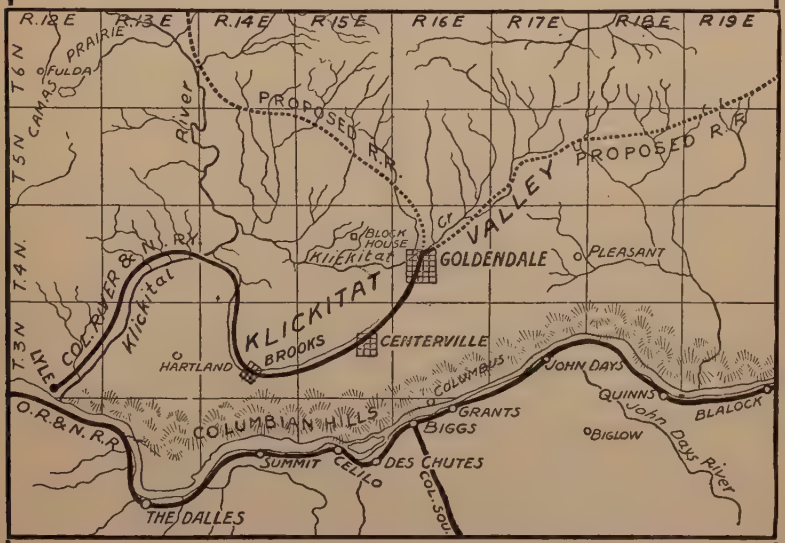

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GREAT CENTRAL RAILROAD

COOS BAY, OREGON to SALT LAKE, UTAH

Among the great enterprises of the year must be mentioned the Great Central Railroad now in course of construction. This is a railroad from Coos Bay, the most capacious harbor and the most accessible on the northern Pacific Coast, between San Francisco and Puget Sound, up through the undeveloped timber lands, extending across Coos and Douglas counties from the ocean to the Cascade Mountain Range, the splendidly fertile prairies of Eastern Oregon and thence into the richest section of Utah, with a terminal station at Salt Lake City.

While the fertile irrigable lands and the abundant water courses of the "Inland Empire," from the Cascade Range to the Rocky Mountains have been the subject of thorough description by reason of Congressional interest and corporate enterprises, the magnificent forest primeval, immense coal area, rich mineral deposits, and extraordinary dairy productiveness of that wonderful zone extending from the Pacific Ocean to the Coast Range have remained a "terra incognita" to all the world save those fortunate men who have fallen upon its wealth

The region consists of a number of well-watered, fertile valleys and rolling uplands. The meteorological conditions make the climate analogous to that of western Europe; for the warm Japanese current, rarifying the atmosphere in winter, draws into the partial vacuüm so formed the warm winds of equinoxial regions, with the rapid vaporizations of the condition. The result is a warm, humid atmosphere, establishing an extraordinary wealth of vegetation between the Coast Range and the ocean, like that of the "Hot Lands" of Mexico and Central America. Last winter there were but thirty-four frost days in Coos County, while snow fell on only two days, and the lowest temperature of the season was twenty degrees above zero.

On entering this forest from the east the stranger is surprised to find oaks draped in moss, like the trees of Florida and other States of the Gulf Coast. As he advances, he sees the ferns becoming trees like those of Central America. In this forest, too, is a great abundance of cabinet woods, curly and bird's-eye and plain maple, white cedar, laurel, willow, and several merchantable hard woods. This wealth is both immense and unique. Coos and Douglas counties contain the largest belt of white cedar in the world, a wood already famous under the name of "Port Orford Cedar," as being the best known wood for the upper works of ship-building.

The giant firs of the region have a wide reputation; spruce, hemlock, and myrtle abound, the last being valuable for finishing purposes on account of the exquisite polish its fine grain admits. Here, also, are ash, alder, and oak.

There are 13,000,000,000 feet of merchantable timber standing in the forests of Coos County and 24,000,000,000 in Douglas, according to the latest official count.

The coal area of Coos County underlies 300,000 acres of surface covered with the timber wealth above described. Gold mining is now enlisting enterprise in both Coos and Douglas counties.

Copper ores of high grade are found in Douglas and also rich cinnabar in paying quantities, also extensive beds of marble rival in coloring the famous marbles of Vermont and Tennessee.

Dairymen, since the establishment of extensive creameries, are netting $1,120 to $1,800 a year, and their cows live out-of-doors, without housing, all the year round.

Crossing the Cascade Range the line of the Great Central Railroad enters an open prairie region of great fertility under irrigation, the character of which remains the same to its terminus at Salt Lake City.

The investor and homeseeker may obtain further information by addressing

A. A. WRIGHT, Manager,

Ainsworth Block, PORTLAND, ORE.